

ROLE OF TECHNICAL EDUCATION IN PRODUCING SKILLED MANPOWER IN PUNJAB

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ABSTRACT

Current study aimed to examine the role of technical education in developing skilled manpower in Punjab. Five parameters including government support, quality of technical education, availability of facilities and equipment and industry-institution linkages were investigated in this regard. A close ended questionnaire was developed to collect data from the instructors of technical education institutions whereas semi-structured interviews were conducted to collect data from managers/recruiters of different industrial units. Quantitative and qualitative data analysis techniques were used to analyze the two sets of data. Findings highlight the government support for enhancing quality of technical education. The study recommends availability of first aid equipment in the workshops and a stronger linkage between the technical education institutions and industry. The study also suggests the inclusion of digital technology training in technical education programs.

Keywords: *Equipment; First aid; Digital Technology; Employment*

INTRODUCTION

Technical and Vocational Education (TVE) plays a pivotal role in socio economic development of any country. Welfare of people is strongly linked with their preparation and training as well skilled persons. Technical and vocational education has capacity to develop and polish students' potential at maximum level. Rapid technological advancement in the world has raised the importance of technical education for future success. Government of Pakistan included vocational and technical education in its highest educational priorities (Kazmi, 2007; Tanveer,2015). National education policy 2009 accepts technical education as major source of enabling people for employability. People having technical skills are in better position for getting job in Pakistan as well as abroad.

The education system, however, is facing multiple challenges in Pakistan(Memon, Joubish, & Khurram, 2007). Technical and vocational education is provincial responsibility and the four provinces vary in structure and delivery mechanism of

technical education in their respective areas. The federal government and four provinces have taken several steps to gain the benefits and outcomes of technical and vocational education. Industrial nature of Punjab economy has strongly influenced the technical and vocational education system of Punjab. The very objective of technical education is not only to impart technical knowledge to the students but to enable them to win lucrative positions in the job market and contribute in economic growth of the country (Khan, Amjad, & Din, 2005). The issues of government support, quality of technical education, availability of facilities, equipment and training infrastructure, and industry-institution linkages are major determinants of the success of technical education system.

THE CURRENT RESEARCH

We in the current study focused to analyze the effectiveness of these major four pillars of technical education in Punjab context. Main objective of this research was to investigate how do government support, quality of technical and vocational education, availability of facilities and equipment and industry-institution linkages contribute in developing skilled manpower in Punjab.

RESEARCH METHODOLOGY

The study demands a deep and expanded investigation of the issue. We, in this regard, followed mix method research approach. We developed a 25 items close ended opinion kit to collect the data from instructors of the technical education institutions. We also developed an interview schedule to gather data from managers and administrators of different industrial units functioning in Punjab. The focus of both research tools was to explore the role of government support, quality of technical education, availability of facilities and equipment in the technical education institutions and industry-institution linkages in developing skilled manpower.

Multiphase sampling techniques was used to select the samples. Twenty nine college of technology were working in the province. We randomly selected 15 colleges from the province in the first phase of sampling. The researchers visited the selected colleges and gathered the information of instructors working regular or contract basis in the selected colleges. In second phase of the sampling ten instructors were randomly selected from each selected college. The researchers personally approached the respondents and requested to fill the questionnaires. Return rate from the instructors was hundred percent. Another major task of sampling was to select industry managers and administrators who were involved in recruitments for their organizations.

We interviewed twenty officers from different industrial units following convenient sampling technique. The researchers got time from the concerned officers and recorded the interviews. No interviews lasted more than 15 minutes. The audio recording of the interviews were written in MS Word files to ease qualitative data analysis. Content analysis approach was followed to analyze qualitative data. Different themes were derived from the data and discussed in different academic and technical education contexts.

FINDINGS

Data were collected from the instructors and managers/recruiters of different industries using two different research tools. Findings of the study, therefore, are presented in two sections.

Data Collected from Instructors

The instructors working in 15 randomly selected technical colleges were approached and requested to fill the questionnaire. Data collected from 150 instructors was analyzed and the results are presented in tabulated forms.

Table 1: *Government support available for technical education in Punjab*

Sr. #	Statement	SDA		DA		UD		A		SA	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
01	Government promotes Technical Education.	02	1.3	14	9.3	09	6.0	77	51.3	48	32.0
02	Education system encourages technical education.	02	1.3	51	34.0	12	8.0	46	30.7	29	26.0
03	Curricula of Technical Education are focused on skill development.	10	6.7	28	18.7	13	8.7	61	40.7	38	25.3
04	Management plays a productive role for technical education.	04	2.7	10	08.6	04	2.7	89	59.3	43	28.7

Results shows that majority of the instructors working in public sector technology college accepts that government supports technical education (table 1). The instructors (66%) also accepted the statement that curriculum of technical education focuses on

skill development. A strong majority of the respondents (88%) claims that management plays a productive role for technical education.

Table 2

Quality indicators of technical education in Punjab

Sr. #	Statement	SDA		DA		UD		A		SA	
		f	%	f	%	f	%	f	%	f	%
01	Quality of Technical Education is suitable.	02	1.3	37	24.7	19	12.7	61	40.7	31	20.7
02	Objectives of technical education are achieved.	03	2.0	15	10.0	34	22.7	60	40.0	38	25.3
03	Instructors are well trained in technical institutes.	02	1.3	05	03.3	16	10.7	95	63.3	32	21.3
04	Technical education develops required skill.	09	6.0	39	26.0	22	14.7	47	31.3	33	22.0
05	Students' training depends on quality of technical education.	01	0.7	02	01.3	10	6.7	50	33.3	87	58.0
06	There is a balance between theory and practical in technical education.	09	6.0	11	7.3	9	6.0	84	56.0	36	24

Data further reveal the instructors perceptions about the quality of technical education in Punjab. Majority of the respondents (61%) though accepted that quality of technical education is acceptable however significant numbers of the instructors (39%) detached themselves from this idea. Sixty five percent of the respondents accepted that objectives of technical education are achieved generally. 84.6% of the instructors claim that instructors appointed in technical education institutions are well trained. 91.3% of the instructors have the idea that students' training depends on quality of technical education available in the institutions. Majority respondents (80%) also

accept that there is a balance between theory and practical in technical education system in Punjab.

Table 3

Facilities and equipment available in the technical education institutions in Punjab

Sr. #	Statement	SDA		DA		UD		A		SA	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
01	Proper labs are available in technical institutes.	08	05.3	10	06.7	08	05.3	79	49.4	53	35.3
02	Sufficient material for practical is available in labs.	15	10.0	12	08.0	15	10.0	68	45.3	40	26.7
03	Workshops are well equipped.	04	2.7	14	09.3	19	12.7	89	59.3	24	16.0
04	First aid box is available in labs.	27	18.0	46	30.7	12	08.0	50	33.3	15	10.0
05	Computer and internet are available in technical institutes.	04	2.7	25	16.7	14	09.3	79	52.7	28	18.7

Students' opinions about the availability of facilities and required equipment are also encouraging (Table 3). Majority of the instructors (84.7%) claims that proper labs are available in technical education institutions. The instructors (72%) accept that sufficient material for practical work is available in the labs. The majority also claims that the workshops in technical education institutions are well equipped. The opinions of instructors about the availability of first aid boxes in labs are worrisome. 48.7% of the respondents rejected the statement that first aid boxes are available in the labs and 8% told them unaware in this matter. It shows majority of the respondents did not support the availability of first aid kits in the lab and workshops on technical education institutions. Majority of the instructors (71.4%) however supported the statement that computer and internet facility is available in the technical educations institutions.

Table 4: *Instructors' opinions about technical education institution and industry linkages*

Sr. #	Statement	SDA		DA		UD		A		SA	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
01	Visits of Teachers to industry are good for teaching- learning process.	02	1.3	05	3.3	09	6.0	73	48.7	61	40.7
02	Institutes help their students in job placement.	10	6.7	24	16.0	09	6.0	66	44.0	39	26.0
03	Industrial tours are arranged for the students.	03	02.0	07	4.7	06	4.0	86	57.3	48	32.0
04	Teachers of technical institute visit industry.	29	19.3	49	32.0	22	14.7	24	15.0	26	18.0
05	Technical education in Punjab is linked with industry.	9	6.0	55	36.7	14	9.3	49	32.7	23	15.3

An important way of promoting technical education is to link it with industry requirement. Data show that the instructors of technical education institutions provide mix information in this regard (Table 4). 89.4% of the instructors accepted that visits of teachers to industry are good for teaching-learning process whoever when they are asked to opine on the statement that teachers of technical institute visit industry; only 33% of the instructors accepted this statement. The instructors however claimed that institutes help their students in job placement and industrial tours are arranged for the students. 42.7% of the instructors negated the statement that technical education in Punjab is linked with industry.

Table 5: *Instructors' opinions about the outcomes of technical education*

Sr. #	Statement	SDA		DA		UD		A		SA	
		<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
01	Technical education	09	6.0	02	1.3	4	2.7	65	43.3	70	46.7

	helps to reduce un-employment.										
02	Technical education is producing skilled labor in Punjab.	2	1.3	24	16.0	24	16.0	63	42.0	37	24.7
03	Technical education develops love for work in students.	03	2.0	23	15.3	27	18.0	61	40.7	36	24.0
04	Technical education focus on developing work ethics in the students.	09	6.0	19	12.7	21	14.0	70	46.7	31	20.7
05	Technical education develops expertise in students.	13	8.7	46	30.7	13	8.7	55	36.7	23	15.3

Instructors' opinions about the outcomes of technical education are generally positive. Majority of the instructors (90%) accept that technical education helps to reduce unemployment. 66.7% of the respondents opine that technical education is producing skilled labor in Punjab and 64.7% of the respondents accept that technical education develops love for work in students. Majority of the instructors (67.4%) support the idea that technical education focus on developing work ethics in the students however the respondents' opinions on developing expertise through technical education are divided. Though 52% of the respondents accept that technical education develops expertise in students yet significant numbers of the instructors (39.4%) rejected this statement.

Data Collected from Industry Managers/Recruiters

Semi-structure interviews of 20 industry managers/recruiters were conducted to collect the data. Data was analyzed using content analysis approach and following themes were drawn from the data analysis process.

Importance of Technical Education for Industry

The officers working as managers and recruiters in the industries were aware of the importance of technical education for industry. A manager having experience of 13 years in industry highlight *“technical education provides us man power. It helps us in running our machines”*. Technical education provides human resources to the industries that have significant role in the development of any industry.

Technical Education and New Era of Digital Technology

Many young managers highlight the challenge of digital technology for our technical education system. A technical manager having experience of 7 years in reputed industry of Punjab said “*our technical education system is producing good results. We select our technical teams from the graduates of these institutions but now there is time to change our conventional technical education system. We should teach and train our students with digital technology*”. Another manager described “*now the nature of industry is being changed from conventional to digital based machinery. Resultantly we are in need of graduates who are proficient in new technologies*”. It demonstrates that technical education needs a shift from conventional to digital technology training.

Demands of Industry

Some industry managers highlight the need of considering industry demands while planning technical education. An officer who had 12 years’ experience of recruiting technical personnel in different industries of Punjab highlights “*many time I saw the graduates are well trained but their training does not match with our demands*”. The managers stress to develop institution-industry coordination in planning technical education programs.

Institution-Industry Linkages

Linkages between industry and technical education institution are every important for planning and delivering quality technical education. The managers give opinions on this issue in detail. A manager having experience of 18 years explain “*there may various problems in technical education process but we can overcome these issues strengthening coordination and linkages between technical education providers and industry*”. Another manager having experience of 15 years elaborated “*linkages between institution and industry support continuously reorganizing and reconstructing of technical education*”. It is derived from the opinions of industry managers that technical education planners should seek guidance from the industry in planning the education and its course structure.

Developing Professional Ethics among the Students

The managers stress to develop professional ethics among the students. A manager having experience of 17 years in different industries stated “*technical education institution should also develop work ethics among the students*”. Another manager having experience of 5 years explained “*technical expertise is necessary for technical personnel but professional ethics are more necessary for the all employees*”.

Professional ethics prepares persons to work in different environments and context?. It is also important that Professional ethics ensure continuous professional development of the workers and technical personnel.

DISCUSSION

Current study aimed to explore technical education system in Pakistan and its role in development of skilled manpower. The data were collected from instructors of the technical institutions and managers working in different industrial units in Punjab. The instructors responded on five different indicators of technical education and its role in developing skilled manpower in Punjab. The instructors accepted that Government is supporting technical education system in the country. Curricula of technical education are designed to develop valuable skills among the students. The establishment of Technical Education and Vocational Training authority (TEVTA) and Skill Development Councils (SDC) can be considered a milestone in this regard (Kazmi, 2007). The TEVTA has attempted to revolutionize technical education system in Punjab and provided necessary equipment and infrastructure to the institutions. The trend of promoting Technical education has got roots in Asia.

Developing countries including Pakistan are relying on the development of skilled workers to contribute in their economy (Tilak, 2003). However the quality is also important to achieve this task. The instructors of the technical education institutions opine that quality of technical education is suitable. The instructors' opinions also reveal that training staff is well trained and the curricula present a balance between theory and practical. The literature reveals the importance of theory and practical for technical education. Another strong point is the availability of required equipment in the workshops however the instructors show reservation on the provision of first aid facility in the labs and training sites. Significant numbers of instructors denied the statement that first aid boxes are available in the workshops however there are evidences of the provision of computer and internet facility in the technical education institutions.

The instructors' opinions highlight the importance of linkages between technical education institutions and industry. According to the instructors they use to visit different industrial units to create bonds and coordination base relationships with industrial units. These linkages enhance the graduates' placements in different jobs in industry as well as improving technical education system. Kazmi(2005) in a previous research identified the importance of institution-industry linkages. She claims that these relationships are necessary to meet the challenges of globalization. The industrial managers in current research have also explored this issue in detail.

According to them nature of industrial sector is continuously changing. Integration of digital technology in conventional technological structure has change the working environment and demands of conventional manufacturing and agriculture industries (Bhutto & Bazmi, 2007).

Weak linkages between the technical education institutions and industry has worsened the impacts of technological transformation on the students (Siddiqui, 2006). The Technical education system consequently is failing to meet the industry requirement. A bad affect, according to Siddiqui(2006), is emerged as proliferated unemployment. The graduates who cannot fulfill the needs of university are unable to secure jobs in industries. The managers and recruiters of industries provided similar information. They opine that institution-industry linkages can be fruitful if we use these relationships to refine and reconstruct technical education system. The emergence of digital technology has boosted this requirement. Pakistan needs to prepare a class of workers who are high-level skilled and proficient in modern technology (Amjad, Haque, & Colclough, 2005). Beside the quality and institution-industry linkages the instructors and the industry managers both have concerns of lacking professional ethics among the students. Developing professional and working ethics are important like developing technical expertise among the technical education graduates.

CONCLUSIONS

Major aim of the study was to examine the role of technical education in developing manpower among the students. The study concludes that technical education is performing this role satisfactory. The instructors of technical education institutions accept the role of government in promoting technical education system in Punjab. The study also concludes that the government is providing well trained teachers and balance curricula to maintain quality of technical education in the province. Government is providing required facilities including technical equipment, computers and internet in labs and workshops to facilitate learning process in the technical education institutions. The study also highlighted the importance of institution-industry linkages. Such linkages will help to aware the technical education planners and providers with the demands and emerging trends of technology. The findings also highlight the importance of digital technology and recommend its inclusion in technical education system in Punjab. The study also suggested focusing on developing work and professional ethics among the technical graduates. TEVTA must start such programs to attract the youth by providing good manpower in each field of living life.

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