Quality Assurance Efficaciousness of Technical Vocational Education and Training (TVET) in Pakistan

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Abstract

The trends of Technical Vocational Education and Training (TVET) in Pakistan is due to the projected opportunities and challenges of worldwide to address the current major issues regarding the youth unemployment, poverty and competitiveness in skills development. To overcome these issues there should be the TVET of world level in Pakistan and it's only possible through the quality assurance of TVET. In current scenario of faster change in the labour markets the quality assurance of TVET has a vital importance. The purpose of this paper therefore is to examine the impact of quality assurance on TVET in Pakistan. The targeted populations were Government College of Technology (GCT), Government Technical Training Centre (GTTC) for boys and girls and private technical institutes and vocational training institutes (VTI) that were situated in the major cities of Pakistan from which a sample size of 5000 staff and student respondents were selected using purposive sampling technique. The data was collected through the likert scale questionnaires and a quantitative research technique was used. The collected data was analyzed by using SPSS software in two aspects one for quality assurance indicators individual impact analysis while other for the combined effect analysis of quality assurance indicators on the TVET. The major finding from the survey is that the impact of quality assurance on the TVET is notice able for the progress, national development, positive perception of TVET, world of work level skills, world level curriculum, employability and industrial perception skills. There is need for the policymaker to focus on the critical areas such as infrastructures and proper financial supports of TVET institutions in Pakistan.

Keywords: Technical Vocational Education and Training, Quality Assurance, Educational Objectives

1. Introduction

Pakistan ranks at the 146th position out of 187 countries in the Human Development Index (HDI), due to its low literacy rate, low per capita income and poor health conditions (UNDP, 2013). Pakistan requires a shift in national priorities like a greater share of the resources to the education and vocational and technical training for its development. All of this is possible by the changing in the thinking of the policymakers and additional allocations of financial resources. In Pakistan Technical Education and Vocational Training (TEVT) are offered by a number of Provincial, Federal and Private organizations. The Vocational Training is skill rigorous and is presented in 27 trades for boys and 18 trades for girls by institutions both in public and private sectors. The controlling authorities for these institutions are of Federal Labour and Manpower Division, Provincial Departments of Education/Labour Women Division, and Manpower Training, Social Welfare, Small Industries, Ex-Servicemen Welfare, WAPDA, Railways, POF, SMEDA, Agriculture, NGOs, Agency for Barani Area Development (ABAD) and private ownership. In 1980 first time the National Training Board (NT Board) was established at the national level and further which was restructured in 2002.

In current scenario of faster change in the labour markets the quality assurance of TVET has a vital importance. In the Asia pacific region many countries are improving their TVET through implementing quality system. The concept of quality assurance for the policy makers, administrators and senior officials of TVET are unrealizable. Technical and vocational education and training (TVET) has appeared as one of the most effective human resource development strategies that Asian countries need to grip in order to train and amend their technical workforce for fast industrialization and national development. Badawi (2013) distinguished that UNESCO and International Labour Organization generally defined TVET as: A broad term referring to those characteristics of the educational procedure concerning, in addition to general education, the study of technologies and associated sciences and the gaining of practical skills, attitudes, perceptive and knowledge relating to occupations in various sectors of social life and economic (p. 284).TVET has vital importance in national development and it has found in the shape of different names such as Technical Education (TE), Occupational Education (OE), Vocational Training (VT), Apprenticeship Training (AT), Vocational Education and Training (VTE), Technical and Vocational Education and Training, and Career and Technical Education (CTE) in education research literature (Wahba, 2010, Ladipo et al., 2013).

Formal education from developmental perception is an instrument for achieving economic growth and technological progress judging by the experience of advanced industrialised nations (Onyesom and Ashibogwu, 2013). When viewed from the functionalist perception, education is a medium for conveying social norms and

values to learners through the formal school system (Filloux, 1993). From policy perception, investment in education is a effective means that the third world nations could discover to fast-track economic growth, technological progress and boosting of citizens' capabilities (World Bank; 2008). The several perceptions of education as expressed above can better be enhanced with a sound quality assurance mechanism.

Quality Assurance is a supervision technique that is defined as all those designed and organized measures required to offer sufficient confidence that a product, service or result will satisfy given requirements for quality and be fit for use. A Quality Assurance program is defined as the sum total of the activities intended at realizing that required standard (ISO, 1994). The quality of TVET is directly related to the achievement of the learning outcomes that fulfill the expectations of students, parents, employers and the stakeholders. Here an outcome means the knowledge, skill and competences achieved at the end of the learning process. The term quality assurance is a serious investigation of the goals, attitudes, techniques and institutional control systems with a view to certifying that set standards and quality are sustained (Fadokun, 2005). The core of quality assurance is to improve the value of education system towards realizing set standards (Onyesom and Ashibogwu, 2013). With exact application to TVET, a quality assurance is imperative in the learning environment (school setting) to provide policy-makers with deeper accepting of vocational education, its occupations, set aims and key features (ETF, 2012). The predictable outcomes of TVET are: to deliver skilled manpower in the applied science and business mainly at craft, progressive craft and technical levels; to deliver the technical and vocational skills essential for agricultural, commercial and economic growth; and to provide training and convey essential skills to individual who shall be self-reliant economically (NPE, 2004). TVET is dynamically followed and encouraged; it should develop skills of learners and increase employability (Maclean, 2011). This research paper is based on two objectives. The first is to examine the impact of quality assurance on TVET in Pakistan with specific importance on technological development, employability and national development. The second intention of the paper is to perform a quality assurance survey on selected TVET institutions that are situated in major cities of Pakistan using eight quality assurance indicators.

1.1. Literature review:

Technical Vocational Education and Training (TVET) and quality assurance are two widely discussed concepts in particular education. TVET is a particular education intended to empower learners through the improvement of their technical skills, human talents, cognitive accepting, attitudes and work behaviour in order to prepare learners effectively for the world of work or situated them practically for self-employment after graduation (Winer, 2000, Oni, 2007). Maclean (2011) claims that TVET if well located could cooperate multi-dimensional characters of inspiring economic development, social growth, recovering conventional education, empowerment, wealth formation, poverty reduction and skills improvement. In a nation with return ingrates of youth restlessness, TVET is well appropriate to aid youths and adults become self-dependent and independent, while for those functioning in the industry, TVET is cooperative in the regions of skills development, improvement of high job turnover and risks of obsolescence (Okolocha, 2012). As creditable as the philosophy of TVET is, it is misunderstand by different people in the society. The parents and wards view vocational education as a variety of education intended for failures and those found to be less intelligent (ETF, 2005; Ladipo et al, 2013).The negative perception of TVET implication low societal estimation of TVET in the society, gross gender imbalance in TVET implementation and inadequate human, material and financial resources for TVET institutions. Conceptually, quality assurance refers to performance measures intended by the authorities for measuring the performance of educational institutions with a view to certifying that the learning results meet the requirements of each society (Igborgbor, 2012; Onyesom and Ashibogwu, 2013). From another perspective, quality assurance refers to recognized procedures, processes and standard systems that maintain and certify effective delivery of educational services (Kontio, 2012). To certify that worth and values are sustained diverse nations and TVET institutions (formal or informal) do have in place quality assurance methods that suite their socio-economic and educational objectives. For example, the United States of America employed the authorization systems as quality assurance mechanism at regional, national and specific levels for efficient monitoring and management of educational services. Whereas, Australia twisted a full-fledged quality assurance unit called Australian Universities Quality Agency (AUQA) to certify efficient quality control of educational services in tertiary institutions (Mohsin and Kamal, 2012). The purpose of authorization Exercise in USA and Australia is to certify that standard and quality of higher education are stringently regulated, maintained and improved by educational institutions in line with altering needs of the society and the industry (Mohsin and Kamal, 2012). The information and figures about education effectiveness, worth and performance is measured through the quality assurance indicators process (Chalmers, 2008). There are several quality assurance indicators but the most common objectives are same as quality improvement. According to UNESCO (2002), following are the quality assurance indicators, what learners achieve; Quality Learning Environments; Quality Content; Processes that support Quality; and results from the learning environment. According to Ehindero (2004), the quality assurance indicators are the teacher's professional competencies/pedagogic skills, the learners'

behavioural characteristics, attributes and demographic factors, the teaching processes, curriculum and learning environment, and the effects of education. Quality assurance indicators could also be categorize as Input, Output, Process and Outcome indicators (Borden, and Bottrill, 1994; Burke et al., 2002; Warglien and Savoia, 2006). Whereas, Aveni (2003) proposed six quality assurance indicators, that are teachers' competencies growth, learning reserve inputs, cooperative management, instructional procedure, monitoring and evaluation, and quality learning outcome. Pakistan's low quality TVET is linked to a number of environmental factors. The leading of the environmental factor is ineffective functioning of TVET curriculum. In Pakistan revealed that there is a wide gap between the intended curriculum (theory) and the achieved curriculum (practice). The restriction of translating educational curriculum into actuality in the domains of polytechnics, colleges and universities had been a persistent execution issue in Pakistan for a very long time. TVET in Pakistan is negative perception by the end-users especially parents, wards, students and policymakers due to poor understanding and low awareness. The Pakistan educational system at present cannot meet the needs of the industry and the society. TVET experienced fall in quality on account of poor funding from government and other stakeholders in Pakistan. In this paper researcher used eight quality assurance indicators that are national development, negative perception of TVET, world standard skill, TVET curriculum, unemployment, industrial perception regarding TVET skilled persons, funding or financial aids to the TVET institutions and infrastructure facilities.

2. Theoretical Framework

The main factor that affects the TVET is quality assurance but quality assurance is also measured through some other indicators that are represented in the framework given below,



The TVET is dependent variable while all others are independent.

Additive model is used here. Equation for the representation of the models is given as,

 $Y_i = \beta_0 + \beta x_i + \varepsilon_i$

Here is, Yi represents the dependent variable, β_0 denotes the constant, β is regression coefficient of independent variables, xi represents the independent variables also called as explanatory variables and ϵ_i denotes the random error. So equation representing our conceptual frame work is given as,

Y (TVET) = $\beta_0 + \beta_1$ (ND) + β_2 (NP) + β_3 (WS) + β_4 (CR) + β_5 (UR) + β_6 (IP) + β_7 (IF) + β_8 (FU) + εi

Here is, Y (TVET) represents the dependent variable Technical vocational education and training, β_1 (ND) is independent variable and represents the national development. B₂ (NP) represents the independent variable negative perception of TVET, β_3 (WS) represents the world standard skills independent variable, β_4 (CR) is independent variable represents the factor curriculum, β_5 (UR) represents the independent variable unemployment rate, β_6 (IP) denotes the independent variable represents the industrial perceptions, β_7 (IF) represents the independent variable infrastructures facilities and last one is β_8 (FU) denotes the independent variable funding.

3. Hypothesis

Following hypothesis are generated on the basis of conceptual framework.

- **H**₁: Technological progress for national development has positive and significant impact on Technical Vocational Education and Training (TVET)?
- **H₂:** Skills acquisition for self-employment has positive and significant impact on Technical Vocational Education and Training (TVET)?

- **H₃:** Preparation of students for the world of work has positive and significant impact on Technical Vocational Education and Training (TVET)?
- **H₄:** Effective curriculum has positive and significant impact on Technical Vocational Education and Training (TVET)?
- **H₅:** Employment rate has positive and significant impact on Technical Vocational Education and Training (TVET)?
- **H**₆: Need of the industry has positive and significant impact on Technical Vocational Education and Training (TVET)?
- **H₇:** Institution infrastructure facilities have positive and significant impact on Technical Vocational Education and Training (TVET)?
- **H₈:** Funding from government and other stakeholders has positive and significant impact on Technical Vocational Education and Training (TVET)?

4. Research methodology

4.1. Research Design

Research design is a plan for research that consists of target population, sampling techniques, sampling size mechanisms of data collection and analysis procedure. A research design expresses the mutual efforts of the major parts of the research project in the solution of research question (Orodtho, 2003). It is the conceptual structure within which research was conducted.

4.2. Sampling Procedure

In this research purposive sampling techniques was used because it was only a particular kind of people who had the needed information. Purposive sampling techniques are refers to the non-probability sampling techniques (Patton, 2002). This sampling technique was used by the researcher for the collection of information from the particular individuals that had the specific knowledge. This knowledge was to be required in this paper for the quantitative research.

4.3. Target Population

The targeted population for this research were the staffs and students of the Government College of technology, Government Technical Training Centre, Vocational Training Institutes for boys and girls and private technical institutes of Pakistan comprising major cities Islamabad, Karachi, Lahore, Hyderabad, Mirpurkhas, Sukkur, Bahawalpur, Multan, Faisalabad, Peshawar, Swat and Muzaferabad.Targeted population is a set of people, element or services that are under observation (Ngechu, 2006). For data collection total 5000 respondent were selected from the targeted population.

4.4. Sample Size

The researcher wants to simplify the results through a subject of target population that is known as a sample (Cohen and Manion, 1994). The response rate was 99.52% of the total population which gave a sample of 4976 respondents.

4.5. Data Collection

The researcher used the quantitative methods of data collection. The likert scale closed ended questionnaires were used to measure various parameters which showed the impact of quality assurance on the TVET. From a total of 5000 questionnaires administered to cross-section of lecturer's and students in selected TVET institutions, a total of 4976 questionnaires were returned after a period of two weeks with consistent follow-ups on personal contact and phone calls. The response rate represents 99.52% of the entire questionnaires.

4.6. Data Analysis

The collected data was then analysed quantitatively by calculating various percentages. Presentation of data was in form of pie charts where provided successful interpretation of findings. Descriptive data was analysed qualitatively and the results provided in the form of explanatory notes. The researcher used statistical package for social sciences to analyse the data (SPSS). The findings arising from the survey as well as the outcomes of eight tested hypotheses are hereby presented and discussed in pie charts and tables below. The survey was asked on likert scale on following grounds, the Strongly Agree with (SA), Agree with (A), Neither Agree nor Disagree (Neutral) with (N), Disagree with (D) and Strongly Disagree with (SD)

1. TVET national is to enhance skills acquisition and promote self-employment in Pakistan. The 52% respondents strongly agree, 33% agree, 10% neutral and 5% disagree on this statement.





2. TVET has the prospect of stimulating technological progress for national development in Pakistan. The 49% respondents strongly agree, 29% agree, 15% neutral, 5% disagree and 3% strongly disagree on this statement.



3. TVET has a mechanism for restriction unemployment of graduates in the Pakistan industry in Pakistan. The 58% respondents strongly agree, 30% agree, 4% neutral, 6% disagree and 2% strongly disagree on this statement.



4. TVET is helpful in preparing students effectively for the world of work and better performance in the industry in Pakistan. The 40% respondents strongly agree, 43% agree, 9% neutral, 7% disagree and 1% strongly disagree on this statement.



5. An outcome of Quality Assurance depends on infrastructural efficiencies in Pakistan. The 25% respondents strongly agree, 36% agree, 27% neutral, 7% disagree and 5% strongly disagree on this statement.



6. Contents of TVET curriculum is according to the needs of the society in Pakistan. The respondents viewed on this statement were 45% adequate, 41% fairly adequate and 14% inadequate.



7. Deficiencies of Funds effects on the quality assurance of your affiliated TVET institution in Pakistan. The 9% respondents strongly agree, 48% agree, 26% neutral, 14% disagree and 3% strongly disagree on this statement.



8. Negative perception of TVET effects on the quality of TVET in Pakistan. The 47% respondents strongly agree, 42% agree, 5% neutral, 4% disagree and 2% strongly disagree on this statement.



Model Summary

Model	Std. Error of the Estimate	R Square	Adjusted R Square
1	0.27754	0.963	0.96
a. Predictors:	(Constant), CR, NP, IP, UR, WS, ND, IF, FU		

The R^2 in the model is 0.963 which means that the independent variables can explain 96.3% of change in the dependent variable. The adjusted R^2 demonstrates that 96% of the variances were explained in this model. In this model standard error of estimate is 27.75% that explains the standard deviation of the estimate (Factors in this model which could affect Technical Vocational Education and Training (TVET).

ANOVA ^a	VA ^a
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Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	264.736	8	29.415	381.874	.000 ^b
1	Residual	10.245	4967	.077		
	Total	274.981	4975			

a. Dependent Variable: TVET

b. Predictors:(Constant), CR, NP, IP, UR, WS, ND, IF, FU

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level of 0% which shows that the data is ideal for making a conclusion on the population's parameter. It also indicates that the model was statistically strongly significant. The researcher used eight quality assurances indicators and model shows the significant impact of these indicators that are acting as independent variables on dependent variables Technical vocational education and training in Pakistan.

	Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		В	Std. Error	Beta			
	(Constant)	.062	.05		1.495	.000	
	ND	.171	.09	.112	1.902	.039	
	NP	.813	.049	.785	16.498	.000	
	WS	.064	.13	.033	1.489	.023	
	CR	.356	.088	.17	4.036	.000	
	UR	.007	.088	.005	2.078	.018	
	IP	.124	.073	.016	12.329	.024	
	IF	.111	.123	.074	1.902	.037	
1	FU	.151	.138	.103	1.088	.028	

Dependent Variable: TVET_a

Beta explains the contribution of each independent variable (ND) national development with beta coefficient of .171 and sig. value of .036 makes the strong contribution in explaining Technical Vocational Education and Training (TVET). (NP) negative perception ($\beta = .813$; p=.000), (WS) world standard skills ($\beta = .064$; p=.023), (CR) curriculum ($\beta = .356$; p=.000), (UR) unemployment rate ($\beta = .007$; p=.018), (IP) industrial perceptions ($\beta = .124$; p=.024), (IF) infrastructures facilities ($\beta = .111$; p=.037), and (FU) funding($\beta = .151$; p=.0.028) all these independent variables shows impact on Technical Vocational Education and Training (TVET) significantly. The statistical tests applied in case, all these independent variables also suggest there is a strong relationship between independent variables and dependent variable.

Correlation									
	Correlation	TVET	ND	NP	WS	CR	UR	IP	IF
ND	Pearson Correlation	.869**	-	-	-	-	-	-	-
NP	Pearson Correlation	.975**	.854**	-	-	-	-	-	-
WS	Pearson Correlation	.857**	.911**	.857**	-	-	-	-	-
CR	Pearson Correlation	.838**	.813**	.813**	.837**	-	-	-	-
UR	Pearson Correlation	.862**	.916**	.861**	.897**	.837**	-	-	-
IP	Pearson Correlation	.810**	.902**	.801**	.861**	.750**	.881**	-	-
IF	Pearson Correlation	.783**	.896**	.768**	.901**	.870**	.936**	.881**	-
FU	Pearson Correlation	.821**	.933**	.815**	.955**	.837**	.931**	.905**	.955**

Convolation

Correlation is significant at the 0.01 level (2-tailed). **

The regression analysis shows that there is a significant impact of independent variables on dependent variable Technical Vocational Education and Training (TVET). Also the correlation analysis shows that the correlations between variables are as follows, all the variables have correlation significant at 0.01 levels with each others. The results of correlation and regression analysis support all hypotheses i.e., the factors have a significant and positive relation with dependent variable Technical Vocational Education and Training (TVET) in the Pakistan.

4.7. Combined equation model

The above models and analysis are shown the impact of the quality assurance indicators on the dependent variable TEVT while the model and analysis given below indicates the impact of combine independent variable

quality assurance on the dependent variable technical vocational education and training.

$$Y (TVET) = \beta_0 + \beta_1 (QA) + \varepsilon i$$

Here is, Y (TVET) represents the dependent variable Technical vocational education and training while β_1 (QA) is independent variable.

Model Summary					
Model	Std. Error of the Estimate	R Square	Adjusted R Square		
1	.49021	.877	.876		

a. Predictors: (Constant), QA

The R^2 in the model is 0.877 which means that the independent variables can explain 87.7% of change in the dependent variable. The adjusted R^2 demonstrates that 87.6% of the variances were explained in this model. In this model standard error of estimate is 49.02% that explains the standard deviation of the estimate (Factors in this model which could affect Technical Vocational Education and Training (TVET). Its show the nearly same results as in the model summary of quality assurance (QA) indicators analysis.

	ANOVAa							
Model Sum		Sum of Squares	Df	Mean Square	F	Sig.		
1	Regression	241.097	1	241.097	1003.291	.000 ^b		
	Residual	33.883	4974	.240				
	Total	274.981	4975					
	1		19					

a. Dependent Variable: TVET b. Predictors: (Constant), QA

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level of 0% which shows that the data is ideal for making a conclusion on the population's parameter. It also indicates that the model was statistically strongly significant. In the combined model the researcher use only one independent variable quality assurance (QA) and one dependent variable Technical vocational education and training (TVET) that shows same results as in the ANOVA analysis of quality assurance (QA) indicators.

	Coefficients ^a					
		Unstandardized Coefficients Standardized Coefficients				
	Model	В	Std. Error	Beta	t	Sig.
1	(Constant)	.485	.063		7.662	.000
	QA	1.489	.047	.936	31.675	.000

Dependent Variable: TVET

Beta explains the contribution of independent variable quality assurance (QA) with beta coefficient of .936 and sig. value of .000 makes the strong unique contribution in explaining Technical Vocational Education and Training (TVET).

Correlations					
		TVET			
QA	Pearson Correlation	.936**			
	Sig. (2-tailed)	.000			
	Ν	4976			

Correlation is significant at the 0.01 level (2-tailed).

The regression analysis shows that there is a significant impact of independent variable (QA) on dependent variable Technical Vocational Education and Training (TVET). Also the correlation analysis shows that the variable has correlation significant at 0.01 levels with each others. The results of correlation and regression analysis support all hypotheses.

5. Conclusion/Recommendations

The entire hypothesis indicates that there is significant relationship between Technical Vocational Education and Training (TVET) and technological progress for national development, skills acquisition for self-employment, Preparation of students for the world of work, the factor curriculum, Unemployment rate, industrial perceptions, infrastructures facilities and funding. All of our hypotheses are proved true and following recommendations are vital for the growth of long term quality assurance that would positively impact on the TVET in Pakistan.

- i. Government should provide adequate funding for TVET institutions in order to meeting national aspirations. Sufficient funding would improve quality of manpower, standards and infrastructural resources and instructional resources in vocational institutions in Pakistan. The private sector organization should play their role in the funding of TVET institution as corporate social responsibility (CSR).
- **ii.** The TVET policymakers should provides such policy that after attaining the TVET our young's may take part in the national development and employment. This measure when properly carried out would fast-track attitudinal change and obtain positive commitment from parents, student, wards and all other stakeholders in the country.
- **iii.** There is a gap between theory and particle and also the trainers and trainees of TVET can understand the expectation or present needs of the industries and their institutional gaps to fulfil the requirements of industries in Pakistan. Exchange programme between Industry and TVET institutions is inevitable for effective TVET outcomes that help the individuals for self-employment.
- **iv.** Technology changes day to day so TVET institutions should invest in training programmes for teachers/lecturers/instructors to keep them informed of best practices and methodological changes in the field. Government should starts campaign through the mass media to general public for removing the negative perception of TVET and introduce the benefits of TVET.
- v. Government should strictly bind the TVET institutes to use the effective curriculum which is according to the need of society and industries. Also all TVET institution fallow the same curriculum in the country and avoid the variances.
- vi. Government of Pakistan should collect the political will to promote TVET as a facilitator for the nation's technological progress, industrialisation and National Development beyond the present expression.

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