

Measuring curriculum effectiveness of Technical and Vocational Training Institutes for Implementing National Skills Strategy (NSS) 2009-13

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ABSTRACT

This study was designed to measure the curriculum effectiveness of technical and vocational training institutes of Pakistan for implementing National Skill Strategy 2009. It employed survey design. 70 principals, 251 instructors, and 5194 trainees of the vocational institutes from all over the Pakistan were selected by systematic random sampling technique. A structured questionnaire was developed and pilot tested to collect the responses from selected sample. The collected data was arranged, coded and analyzed by inferential and descriptive statistics. The findings revealed that all female and male principals, instructors and trainees of public/private vocational institutes of all the regions (AJK, Balochistan, FATA, GB, ICT, KP, Punjab, and Sindh) had the same opinions about the effectiveness of curriculum for implementing National skill strategy. According to them the curriculum which is developed under NAVTTC's collaborative bodies for CBT, is skill oriented and is in an easy language. The curriculum is achieving the desired outcomes which are described in the Training Package.

KEYWORDS: NAVTTC, implementation of NSS in the context of curriculum

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INTRODUCTION

Technical and vocational education and training (TVET) can be defined as the education for employment knowledge and skills for a person to prepare him/her for a profession. Its main purpose is equity, inclusion and sustainable development in a country. It is important for economic prosperity through the education and technical expertise of masses. There are multiple examples of successful economies which are based on strong TVET policies such as Germany, Switzerland, Austria, Canada, Finland, Singapore and China. These countries are heavily investing in their TVET system to remain globally competitive. TVET could be a master key to unlock the sustainable development of both developed and under developed countries (Ansari & Wu, 2013; Jhalla, 2004; Grierson & Young, 2002; Tabbron, & Yang, 1997).

Pakistan has the largest number of young generation. Almost 64 % of the total Pakistan's population is below the age of thirty making it second country in South Asia having such a big chunk of young people (Islam, 2018). This young segment has an immense potential for socio-economic development of country if proper strategies should be formulated for nurturing technical and vocational skills in youth and preparing them for entrepreneurship. But, Pakistani TVET system has not enough capacity to cater the needs of this fast growing youth segment and as a result large number of population remains out of

the employment stream (Islam, 2018; Noorudin, 2017; Ansari & Wu, 2013). Pakistan being a developing country can capitalize on this opportunity and the economy may be uplifted by investing in TVET activities. Therefore, extensive reforms are needed in Pakistan to improve the TVET activities.

Government of Pakistan has realized this fact and introduced a number of reforms for strengthening the technical and vocational education in Pakistan (Noorudin, 2017; Ansari & Wu, 2013; GoP, 2013; Kazmi, 2007). National Vocational Technical Education Commission (NAVTEC) was established in 2005 for reforming TVET in Pakistan. NAVTTC documented a vision in National Skill Strategy 2009-13 (NSS) to reform Pakistan's TVET to impart industry relevant skills to trainees (Janju, & Irfan, 2008). The major objectives of NSS are to provide relevant skill for industry and economic development; to ensure improved access, equity, employability of population and to assure quality of TVET activities. National skill strategy brings two major paradigm shifts in technical and vocational education in Pakistan. First, there is a shift from outdated and time bound curriculum to competency based and flexible curriculum. NAVTTC developed 106 new curricula by the involvement of private sector and industry to make the curricula of National training institutes flexible and competency based. DACCUM process was adopted for developing these courses. DACCUM focuses on

developing the curriculum by using Competency Based Training (CBT) strategy; it is being used by many countries to reform the curriculum. CBT is industry defined and outcome based education programs which are based on industry standards. NAVTTC developed curriculum, learning materials and assessment by using these industry generated standards so it should be relevant to industry. National Course Review Committee (NCRC) approves the curriculum and these approved national templates are used for all the curriculum development of training institutes. These courses are being taught in all technical and vocational training institutes in all over Pakistan for realizing the National Skill Strategy. There is limited research available on the effectiveness of new curriculum in Pakistani technical and vocational institutes. Therefore, it is the need of the hour to conduct a study which will generate the required knowledge to further improve the TVET system in Pakistan. This study is designed to fill this gap by measuring the curriculum effectiveness of technical and vocational training institutes of Pakistan for implementing National Skill Strategy 2009.

Research objectives

The objectives of the research study were to:

1. Measure the effectiveness of curriculum of technical and vocational training institutes for implementing National Skill Strategy as perceived by stakeholders (Principals, Instructors, and Trainees).
2. Find out the difference among the pinion of respondents about curriculum regarding their demographics.

RESEARCH METHODOLOGY

It was a descriptive research study and survey design was used to collect the information

from the respondents. The Population was comprised of all the principals (3581), instructors (14534) and trainees (3, 58,100) in vocational institutes across Pakistan in the academic year 2017-2018. By applying systematic random sampling technique, 71 principals, 28 instructors, and 5194 trainees were selected from across Pakistan. For this study, the researcher used three questionnaires, one for principals, one for instructors, and one for trainees to explore the information regarding curriculum developed by the NAVTTC for the implementation of NSS. Each questionnaire was comprised of 10 items regarding curriculum based on five points Likert Scale. The reliability of the questionnaires was determined by pilot testing. For pilot testing the questionnaires were administered to 10 principals, 30 instructors, and 100 trainees of vocational institutes. The values of Cronbach Alpha were calculated for each instrument. The computed final alpha reliability of principals' questionnaire was 0.78 and instructors' questionnaire was 0.83, and trainees' questionnaire was 0.79 which shows that questionnaires could be used for large scale data collection.

The researchers collected the data from the institutes by visiting the selected institutes. The data was collected from the mid of February, 2018 till September 2018. The collected data was coded and entered into computer for analysis. To analyze the data, inferential and descriptive statistics were applied by using SPSS software (version 20.0). The results of the study are as follows:

RESULTS

It was a survey research and collected data was analyzed by calculating descriptive and inferential statistics. The findings of the study are presented in the following tables.

Table 1. *Frequency and percentage of the responses (Principals=70, Instructors=284, and trainees=5194) regarding curriculum effectiveness*

S#	Statements	Respondents	\bar{X}	Std.D	T	sig
01	The curriculum which is being developed under NAVTTC's collaborative bodies for CBT, is in easy language	Principals	3.93	1.121	29.332	0.000
		Instructors	3.72	.887	66.500	0.000
		Trainees	3.76	.955	283.52	0.000
02	The curriculum which is being developed under NAVTTC's collaborative bodies for CBT, is available every where	Principals	3.63	1.119	27.139	0.000
		Instructors	3.53	1.454	38.508	0.000
		Trainees	3.02	1.066	204.04	0.000
03	Curriculum under NAVTTC's collaboration, is design to meet international industrial need of the trainee	Principals	3.77	1.106	28.540	0.000
		Instructors	4.02	.908	70.101	0.000
		Trainees	3.70	1.256	212.14	0.000
04	The developed curricula for CBT, meet the outcomes which are describe in the Training Package	Principals	4.00	1.077	31.081	0.000
		Instructors	3.88	1.030	59.632	0.000
		Trainees	4.20	.919	329.50	0.000
05	Each unit of Competency-Based Training's content based on new specific objectives	Principals	3.71	.950	32.708	0.000
		Instructors	4.05	1.116	57.458	0.000

S#	Statements	Respondents	\bar{X}	Std.D	T	sig
06	CBT's curriculum is developed after the consensus of all industrial stakeholders	Trainees	4.26	.979	313.18	0.000
		Principals	3.81	1.081	29.530	0.000
		Instructors	3.78	.991	60.382	0.000
		Trainees	3.87	.911	306.11	0.000
07	Curriculum which provided for CBT is skills oriented	Principals	3.97	1.049	31.672	0.000
		Instructors	3.94	.994	62.839	0.000
		Trainees	3.28	.903	261.96	0.000
08	The developed curriculum for CBT, allows learners to enter and exit training programs at any stage	Principals	3.00	1.542	16.281	0.000
		Instructors	3.89	1.249	49.368	0.000
		Trainees	3.93	1.108	255.43	0.000
09	Curriculum provides learners with a record of the competencies they need to achieve	Principals	3.64	.948	32.134	0.000
		Instructors	3.84	.770	78.920	0.000
		Trainees	4.04	.983	296.28	0.000
10	Under CBT, certificate is being awarded according to recognition of trainee's current competencies (RCC)	Principals	2.99	1.518	16.457	0.000
		Instructors	2.09	1.075	60.303	0.000
		Trainees	2.81	.955	287.80	0.000

It is indicted in the following table that the computed mean values of all statement except statement No.10of principles is (2.99; 2.09; and 2.81) and computed sig value is 0.000 which is less than the critical value=0.05. It shows that mean value of the all statements of the principals, instructors, and trainees is significantly higher than the cut point 3. It may be concluded from the analysis that all the respondents were significantly agreed with the statements that curriculum designed under NAVTTC is in easy language and available everywhere. It is also skill oriented

catering the international industrial needs of the trainee. The curriculum is achieving the desired outcomes which are described in the Training Package as well. Each unit of Competency-Based Training's content is based on new specific objectives and provides learners' with skill-set they need to achieve. CBT's curriculum was developed after the consensus of all industrial stakeholders but it neither allows learners to enter nor exit training programs at any stage. Further, no certificate is being awarded for the recognition of trainee's current competencies (RCC).

Table 2. Region wise difference among the opinions of participants

ANOVA statistic was applied to see the variance of responses in different regions of Pakistan about the effectiveness of curriculum in technical and vocational training institutes. The findings are as follows:

Respondents		SS	df	MS	F	Sig.
Principals	Between Groups	235.774	7	33.682	1.879	.088
	Within Groups	1111.212	62	17.923		
	Total	1346.986	69			
Instructors	Between Groups	196.964	7	28.138	1.659	.120
	Within Groups	4121.777	243	16.962		
	Total	4318.741	250			
Trainees	Between Groups	110.517	7	15.788	.733	.644
	Within Groups	111657.901	5186	21.531		
	Total	111768.418	5193			

It is indicated in the following table that the computed F-values of principals, instructors, and trainees responses (1.879, 1.659, and .733) at df (7) are less than the table value (2.15) and computed sig value (.0888, .120, and .644) is greater than the critical value (0.05) for principals, instructors, and trainees regarding curriculum. Therefore, there is

no significant province wise difference among the opinions of principals, instructors, and trainees about curriculum. Therefore, it may be concluded that principals, instructors and trainees of all provinces agreed that curriculum of the institutes is effective meeting the objectives of National Skill Strategy.

Table 3. Gender wise difference among the opinions of participants

Independent sample t-test was calculated to see the difference among opinions of the participants according to their gender and institute type.

Respondents	Variable	M	St.D	t.value	df	Sig.
Principals	Female	63.67	4.885	0.957	68	.342
	Male	61.86	4.382			

Instructors	Female	61.80	4.021	0.372	249	.710
	Male	61.47	4.178			
Trainees	Female	64.09	4.642	1.353	5192	.176
	Male	63.92	4.637			

** Level of sig <.05

It is indicated in the following table that the computed t-values of gender wise principals, instructors, and trainees responses (0.957, 0.372 and 0.1353) at df (68, 249, and 5192) is less than the table value (2.000, 1.972, and 1.960) and computed sig values (.342, .710, and .176) are greater than the critical value (0.05) for principals, instructors, and trainees regarding curriculum.

Therefore, there is no significant gender wise difference among the opinions of principals, instructors, and trainees about curriculum. So, it may be concluded that male and female principals, instructors and trainees had the same opinion about curriculum effectiveness designed by NAVTTC for implementing NSS.

Table 4. Difference of opinion among respondents according to type of Institute

Respondents	Variables	M	St.D	t.value	df	Sig.
Principals	Public	49.58	4.800	1.231	68	.233
	Private	48.15	4.521			
Instructors	Public	61.28	4.358	-.598	249	.550
	Private	61.62	4.063			
Trainees	Public	63.93	4.638	-.640	5192	.522
	Private	64.02	4.640			

** Level of sig <.05

It is indicated in the following table that the computed t-values of type of institutes wise principals, instructors, and trainees responses (1.231, -.598 and -.640) at df (68, 249, and 5192) is less than the table value (2.000, 1.972, and 1.960) and computed sig values (.233, .550, and .522) are greater than the critical value (0.05) for principals, instructors, and trainees regarding curriculum. It may be concluded that principals, instructors and trainees of the public and private vocational institutes had the same opinion about curriculum under NAVTTC.

is being awarded according to the trainees' current competencies (RCC). On the bases of research finding it is recommended that NAVTTC should revise curriculum and designed it in such a way which allow learner to enter and exit training programs at any stage. The present research also highlighted that certificate are not being awarded according to trainees' current competencies (RCC). It is recommended that NAVTTC, TEVTA or other awarding authorities should develop a mechanism to award certificate to trainee for his/her competency.

CONCLUSION

This study was designed to measure the curriculum effectiveness of technical and vocational training institutes of Pakistan for implementing National Skill Strategy 2009. It employed survey design. The findings revealed that all the principals, instructors, and trainees are agreed that NAVTTC is playing important role for developing effective curriculum to meet the objectives of NSS. According to them the curriculum which is being developed under NAVTTC's collaborative bodies for CBT, is in an easy language and available everywhere. It is also skills oriented achieving international and industrial need of the trainee. Further, it is achieving the outcomes which are described in the Training Package. Each unit of Competency-Based Training's content is based on new specific objectives and provides learners with a record of the competencies they need to achieve. All the respondents agreed that CBT's curriculum was developed after the consensus of all industrial stakeholders but it neither allows learners to enter or exit training programs at any stage nor certificate

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