



Teachers' Perceptions about Problems and Prospects of Diploma of Associate Engineers (DAE) Program in Punjab

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Abstract

The present study was aimed to investigate teachers' perceptions about problems and prospects of the Diploma of Associate Engineers (DAE) program in Punjab. All the teachers (Civil, Electrical and Mechanical) teaching to DAE students in District Punjab were the population of the study. Fifteen teachers from 8 colleges of technologies were selected randomly; therefore, 120 teachers were selected as a sample of the study. A survey questionnaire was used to collect data from the respondents. The reliability of the instrument was 0.91. Findings revealed that teachers were more focused on the curriculum developed by TEVTA authorities, physical infrastructure and teachers' methods of teaching. Moreover, teachers, according to their experience, have differences of opinions regarding administrative facilities and assessment system in TEVTA institutions. Teachers, on the basis of their experience, have differences of opinions regarding administrative facilities and a proper monitoring system. It is recommended that the curriculum should revise periodically, along with the demand of the industry.

Key Words: DAE program, Curriculum, Problems, Prospects

Introduction

Technical and vocational education is prepared to develop people for the specified abilities, capacities, capability, occupations, business, farming entrepreneurship, and it is usually associated with physical and hands-on skills, and this mostly doesn't involve educational competencies Ozioma (, 2011). Vocational training usually is subjected toward instructions and development that is emphasized on more practical skills and made a person eligible to work and execute errands in a specific field. Technical education is also alike, but the main emphasis is on technology and enhancements made in the field of computers and digital information.

The main advantage of the system of TEVT is that it helps in lessening the rate of unemployment as it supports the young generation to develop the skills necessary for the need of today's business. The main objective of TEVT is to help and made available human power in diverse areas, to make available technical information and vocational abilities. Proficient and capable individuals have a major part in the development of economic, industrial development, personal development, and entice foreign ventures. Non-employment and underemployment are the two considerate matters that are faced by numerous countries that include Pakistan, and these matters are the hindrances in the path of economic development. The enrolment and accomplishment rate in the institutions of TEVT is becoming less every day that is consequently declining in proficient human power Al-sad (2007).

Al-sad (2007) examined that little standing of Technical Education and Vocational Training in the surroundings have an impact on the attitude of the students toward it. He also discovered that many of the students have impartial behavior toward Technical Education and Vocational Training. Other indicators that is the parents' impact, siblings and impact of the peers on the behavior toward Technical Education and Vocational Training. The result of Awang et al. (2011) equivalency of Technical and Vocational Education by general education, societal standings in community and the implementation of the subject matter are the necessary indicators to entice students. Ozioma (2011) examined that the financial standings of the parents and the absence

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of a professional analyst in the institutions have an influence on student's preference towards Technical and Vocational Education.

Ohiwerei and Nwosu (2009) discovered that the political and economic state of a nation, an occupation that reimburses much and friends circle are the indicators that have an impact on the attitude of the students towards Technical and Vocational Education. These days most of the educated individuals are unemployed who took formal education in institutes. In Pakistan, awareness of Technical and Vocational Education is negative, and low-income jobs are related to it. Adolescents thought of highly respectable job and felt humiliation in work that is relevant to skill and practical work and even the jobs in industries. This is the foremost cause of unemployment that is dispersing around the nation. In Pakistan, The TEVT system is managed mutually by diverse institutes such as the Technical and Vocational Training Authority (TEVTA), Punjab Vocational and Training Authority (PVTC) and the Skill development council. Availability of proficient and trained manpower is the prime aim of Technical and Vocational Education.

With the development in the technological world, the planet Earth has become a global village; the impact of this progress in the field of technology is moved and carried on from one nation to the other very quickly. The sphere of work is challenging the proficient and capable human resource to run the industry; this is the reason that all the established and countries that are developing are focused more on the advancement of Technical Vocational Education and Training (TVET). To lessen the rapidly growing unemployment, encouraging entrepreneurship (self-employment), decreasing poverty, and for the growth of economics and industry; Technical Education is being utilized as a master code (Quisumbing, 2013. Pg.26).

Javied and Hyder (2009) have articulated that the term Technical Education denotes that post-secondary subjects of study (Diploma of Associate Engineer) and applied training that pointed toward the development of professionals to perform tasks as an intermediate supervision staff, whereas Vocational Education denotes the low level of education and training for the development of capable individuals in different fields. The period of Vocational and Technical Educational programs arrays from three months to three years, likewise credentials for entrance also differ regarding the program. A three-year course that is considered as Diploma of Associate Engineer (DAE) is a key program of Technical Education in the nation. The division of Education in Pakistan has been developing slowly over the seventy years; Gujjar and Chaudhry (2009) explain that technical education might not disperse vast at a similar wavelength as general education. Pakistan is confronting an ever-spreading rate of unemployment in youngsters, whilst the business society is deficient for the proficiently competent human resource, this breach can be enclosed by emphasizing on quality Technical Education in the nation. These days worldwide and the data-focused local area is important to be moral, devoted to the reverence for humanity, individual self-confidence, and exertion as a self-acknowledgement and affectedness, monetary and cultural development. Specialized instruction ought to include moral training and vital accentuation on the necessity's limits of a person locally as well (Quisumbing, 2013). This burdens a total and firm strategy to Technical Education and improvement.

This requests an all-encompassing and incorporated way to deal with Technical Education and advancement. As the present worldwide and information focused society swings from a customary to the cutting-edge way of life through the presentation of new mechanical patterns, it requests for a more top to a bottom agreement and ability about innovation. This features more commands for talented labor furnished with the capacity and the serious edge in playing out the undertakings needed of these arising innovations. Specialized Education gives accentuation on the advancement of an information economy. Specialized Education is assuming an imperative part in building up the capability, and work capabilities to adjust to the alterations achieved by this improvement of chances came about by borderless trade of monetary movement (Majumdar, 2010). Associations, such as UNESCO (and UNEVOC) with the coordinated effort of different foundations, for example, World Bank, International Labor Organization and Inter-Regional gatherings, are attempting to achieve the greatest advantages of Technical Education as a way to improve the existences of individuals. In the new days, abilities obtaining and advancement is considered as basic to the instructive turn of events, work market incorporation and monetary development (Majumdar, 2008).

Problems and issues of Technical Education in Pakistan

It has been brought up in MTRF 2005-10 of Pakistan that Technical Education is dealing with the accompanying principal issues in Pakistan:

1. Lack of industry-organization linkage
2. Low enrolments
3. Shortage of very much prepared and qualified instructors
4. Out-dated Curricula
5. Changing necessities for abroad/neighborhood work

Shah (2009) has detailed that the structures, financial plan, transport and inns of specialized establishments are not adequate; the offices of most recent understanding material, online examination, direction and guiding are not up to check. Educators need mechanical openness and appropriate insight; graduates or pass-outs are not perceived and acknowledged in the industry. The same discoveries have been introduced by Adviso (2009).

Shah (2013) has additionally detailed that the educational plan and assessment framework are out-dated, hypothesis situated, less centred around useful specialized ability, and there is no contact between specialized foundations and industry. An exploration study directed by the National Institute of Science and Technical Education, Islamabad for UNESCO, (2014) on "Specialized and Vocational Education in Pakistan at Secondary level" shows that the linkage with industry is exceptionally feeble besides in Punjab. There could be no appropriate course of action of personnel advancement; Technical Vocational Education and Training (TVET) in Pakistan needs to design and build up a legitimate framework and foundation for pre-administration and in-administration educator preparing.

Moreover, Shah (2013) has revealed that arrangements set practical targets, yet designs made are not sensible and exploration-based, significant personnel isn't counseled in a cycle of plan readiness. No legitimate framework has been created for quality administration, and there is the absence of co-appointment at the public level. Political precariousness, Adhoc-ism, spillage of assets, ill-advised usage of assets and inappropriate observing has likewise been accounted for as underlying drivers for the crumbling of Technical Education. "Globalization of the economy and quick mechanical advancement challenge the present labor force to plan for nonstop change, because of mechanical development and rebuilding of the working environment, numerous specialists have discovered that their present specialized abilities are out-dated" (Hassan, 2010. p-68).

Shaikh and Shah (2010), in their nation paper "Rebuilding of TEVT in Pakistan", have brought up that Technical Education needs more assets in contrast with general training. Deficiency of assets consistently stayed significant snag to send essential preparing for the understudies cooping the quality expertise guidelines and occupation market requests, where a more noteworthy measure of assets is needed for substitution or rebuilding of old/obsolete hardware and gear; he further brought up that; in Pakistan, practically 2.2% of GNP is apportioned to Education Sector, from it Technical Education gets just 0.065%. Without proper arranging, expeditiously expanding the populace is additionally a test; it might result in as emerge in the joblessness rate in Pakistan. The youthful populace can be transformed into a helpful asset through better Technical Education; it has been recognized that Technical Education and preparing is considered as fundamental pre-imperative for the financial improvement of a nation (Rutayuga & Kondo, 2004).

Directly from the freedom of Pakistan, the meaning of Technical Education has been felt, and various plans and arrangements have been declared by governments now and again, yet the outcomes were not as they ought to be. What are the deterrents in the execution of these designs for the upgrade of Technical Education in the country? What are the worldwide patterns with respect to Technical Education? What steps ought to be taken to beat these obstructions? These are the issues specialists should look at, and specialists should reply, for better future arranging and improvement of the country. This examination is an exertion in this manner to discover answers to the above talked about issues. This examination will be helpful for the public organizers and strategy creators in better arranging and developing the structure expected to upgrade the nature of Technical Education in the country, therefore produce gifted HR, make them work market situated and improve the country circumstance with respect to joblessness.

Objectives of the Study

The study has the following objectives.

1. To find out teachers' level of perception about problems and prospects of the DAE program proposed by TEVTA.
2. To find out the significant difference of teachers' perceptions about problems and prospects of DAE in terms of their demographic information (locale, program, qualification, age and experience).

Research Questions of the Study

The study has the following research questions.

1. What is the level of teachers' perceptions about problems and prospects of the DAE program proposed by TEVTA?
2. Is there any significant difference in teachers' perceptions about problems and prospects of DAE in terms of their locale?
3. Is there any significant difference in teachers' perceptions about problems and prospects of DAE in terms of their relevant program (civil, electrical, and mechanical)?
4. Is there any significant difference of teachers' perceptions about problems and prospects of DAE in terms of their qualification?
5. Is there any significant difference of teachers' perceptions about problems and prospects of DAE in terms of their age?
6. Is there any significant difference of teachers' perceptions about problems and prospects of DAE in terms of their experience?

Methodology

The present study was quantitative in nature in which the researcher investigated teachers' perceptions about problems and prospects of the DAE program proposed by TEVTA. All the teachers (civil, electrical and mechanical) teaching to DAE students from Punjab were the population of the study. Fifteen teachers from 8 colleges were selected randomly; therefore, 120 teachers were selected as a sample of the study. A survey method was employed to collect data. A survey questionnaire was used to collect data from the respondents. The reliability of the instrument was 0.91. Data were collected by visiting colleges of technologies that are offering three years DAE (civil, electrical and mechanical) program. Descriptive and inferential statistics were used for data analysis. Results are shown in the form of tables below.

Results

Table 1. Descriptive Scores of Teachers' Perceptions about Prospects of DAE Program

Variables	Mean	SD	Minimum	Maximum	SE	Variance
Curriculum	28.14	3.33	20.00	34.00	0.30	11.11
Physical Facilities	33.51	6.65	19.00	45.00	0.60	44.23
Academic Facilities	14.87	3.41	4.00	20.00	0.31	11.69
Administrative Facilities	19.70	3.01	12.00	25.00	0.27	9.09
Methods of Teaching	28.73	3.91	18.00	35.00	0.35	15.35
Assessment and Evaluation	19.26	3.55	9.00	25.00	0.32	12.65
Social Well-Being	12.76	1.79	8.00	15.00	1.79	3.20

This table shows the differences between rural and urban teachers' perceptions about different aspects of the DAE program proposed by TEVTA. The factor "social well-being" indicated a low mean score (1.79), which

shows that teachers are a little bit anxious about this factor and keep continuing their practices. On the other hand, the high mean score (33.51) shows that teachers are more anxious about “physical facilities” provided by TEVTA to the institutions. They wanted to have maintained college building, equipped labs with technology, first aid facilities, fire-fighting facilities, hostel and transport facilities for DAE students in order to provide them with a good learning environment.

Table 2. Comparison of Rural and Urban Teachers’ Perceptions about Prospects of DAE Program

Variables	Locale	N	M	SD	t-value	Df	Sig.
Curriculum	Rural	41	28.63	3.09	1.168	118	0.884
	Urban	79	27.88	3.44			
Physical Facilities	Rural	41	33.09	7.27	-0.475	72.051	0.036
	Urban	79	33.73	6.34			
Academic Facilities	Rural	41	14.92	2.91	0.119	118	0.328
	Urban	79	14.84	3.66			
Administrative Facilities	Rural	41	19.85	3.26	0.379	118	0.291
	Urban	79	19.63	2.90			
Methods of Teaching	Rural	41	29.43	3.50	1.427	118	0.423
	Urban	79	28.36	4.08			
Assessment and Evaluation	Rural	41	19.90	3.58	1.417	118	0.517
	Urban	79	18.93	3.52			
Social Well-Being	Rural	41	12.97	1.78	0.920	118	0.237
	Urban	79	12.65	1.79			

This table shows the differences in rural and urban teachers’ perceptions about different aspects of the DAE program proposed by TEVTA. It is indicated that rural and urban teachers about physical facilities (infrastructure, labs, equipment, fire-fighting, and hostel facilities) have significant difference (t-value= 0.475, $p=.036$) at $p\leq 0.05$ level of significance as compared to the other aspects (curriculum, academic facilities, administrative facilities, MOT, assessment, and social well-being). It indicates that teachers emphasized more on the completion of physical facilities for DAE students in institutions provided by TEVTA.

Table 3. Program (Civil, Electrical and Mechanical) wise Comparison of Teachers about Different Aspects of the DAE Program

Variables	SS	MS	Df	F	Sig.
Curriculum	17.017	8.508	2	0.762	0.469
	1305.575	11.159	117		
	1322.592		119		
Physical Facilities	2.017	1.008	2	0.022	0.978
	5261.950	44.974	117		
	5263.967		119		
Academic Facilities	6.200	3.100	2	0.262	0.770
	1384.925	11.837	117		
	1391.125		119		
Administrative Facilities	2.317	1.158	2	0.125	0.882
	1080.475	9.235	117		
	1082.792		119		
Methods of Teaching	22.317	11.158	2	0.723	0.487
	1805.150	15.429	117		
	1827.467		119		

Assessment and Evaluation	.517		2		
	1504.950	0.258	117	0.020	0.980
	1505.467	12.863	119		
Social Well-Being	6.317		2		
	375.150	3.158	117	0.985	0.377
	381.467	3.206	119		

Program (civil, electrical, mechanical) wise differences in teachers' perceptions about different aspects of the DAE program proposed by TEVTA were investigated by applying one-way ANOVA. It is indicated that there was no significant difference at $p \leq 0.05$ level of significance was found between teachers' perceptions about the DAE program in institutions proposed by TEVTA.

Table 4. Qualification Wise Comparison of Teachers about Different Aspects of the DAE Program

Variables	SS	MS	Df	F	Sig.
Curriculum	147.327		5		
	1175.264	29.465	114	2.858	0.018
	1322.592	10.309	119		
Physical Facilities	605.553		5		
	4658.414	121.111	114	2.964	0.015
	5263.967	40.863	119		
Academic Facilities	12.728		5		
	1378.397	2.546	114	0.211	0.957
	1391.125	12.091	119		
Administrative Facilities	63.590		5		
	1019.202	12.718	114	1.423	0.221
	1082.792	8.940	119		
Methods of Teaching	81.394		5		
	1746.073	16.279	114	1.063	0.385
	1827.467	15.316	119		
Assessment and Evaluation	97.727		5		
	1407.739	19.545	114	1.583	0.171
	1505.467	12.349	119		
Social Well-Being	33.863		5		
	347.603	6.773	114	2.221	0.057
	381.467	3.049	119		

Qualification wise comparison between teachers' perceptions about different aspects of the DAE program proposed by TEVTA was investigated by applying one-way ANOVA. It is indicated that teachers about curriculum (t-value= 2.858, $p = .018$) and physical facilities (infrastructure, labs, equipment, fire-fighting, and hostel facilities) have significant difference (t-value= 2.964, $p = .015$) at $p \leq 0.05$ level of significance as compared to the other aspects (academic facilities, administrative facilities, MOT, assessment, and social well-being). It indicates that teachers have differences of opinions regarding curriculum and physical facilities for DAE students in institutions provided by TEVTA.

Table 5. Age-Wise Comparison of Teachers about Different Aspects of the DAE Program

Variables	SS	MS	Df	F	Sig.
Curriculum	69.624		5		
	1252.968	13.925	114	1.267	0.283
	1322.592	10.991	119		

Physical Facilities	353.953		5		
	4910.013	70.791	114	1.644	0.154
	5263.967	43.070	119		
Academic Facilities	49.752		5		
	1341.373	9.950	114	0.846	0.520
	1391.125	11.766	119		
Administrative Facilities	78.234		5		
	1004.558	15.647	114	1.776	0.123
	1082.792	8.812	119		
Methods of Teaching	18.373		5		
	1809.094	3.675	114	0.232	0.948
	1827.467	15.869	119		
Assessment and Evaluation	7.408		5		
	1498.059	1.482	114	0.113	0.989
	1505.467	13.141	119		
Social Well-Being	25.671		5		
	355.796	5.134	114	1.645	0.154
	381.467	3.121	119		

Age-wise differences in teachers' perceptions about different aspects of the DAE program proposed by TEVTA were investigated by applying one-way ANOVA. It is indicated that there was no significant difference at $p \leq 0.05$ level of significance was found between teachers' perceptions about the DAE program in institutions proposed by TEVTA.

Table 6. Experience Wise Comparison of Teachers about Different Aspects of the DAE Program

Variables	SS	MS	Df	F	Sig.
Curriculum	72.982		5		
	1249.610	14.596	114	1.332	0.256
	1322.592	10.961	119		
Physical Facilities	295.146		5		
	4968.821	59.029	114	1.354	0.247
	5263.967	43.586	119		
Academic Facilities	75.435		5		
	1315.690	15.087	114	1.307	0.266
	1391.125	11.541	119		
Administrative Facilities	228.593		5		
	854.198	45.719	114	6.102	0.000
	1082.792	7.493	119		
Methods of Teaching	102.769		5		
	1724.698	20.554	114	1.359	0.245
	1827.467	15.129	119		
Assessment and Evaluation	194.704		5		
	1310.763	38.941	114	3.387	0.007
	1505.467	11.498	119		
Social Well-Being	19.573		5		
	361.893	3.915	114	1.233	0.298
	381.467	3.175	119		

Experience wise comparison between teachers' perceptions about different aspects of the DAE program proposed by TEVTA was investigated by applying one-way ANOVA. It is indicated that teachers about

administrative facilities (t-value= 6.102, $p=.000$) and assessment & evaluation (t-value= 3.387, $p=.007$) have a significant difference at $p\leq 0.05$ level of significance as compared to the other aspects (curriculum, physical facilities, academic facilities, MOT, and social well-being). It indicates that teachers have differences of opinions Regarding administrative facilities and assessment & evaluation for DAE students in institutions provided by TEVTA.

Discussion

The objective of the present study was to investigate teachers' perceptions about the problems and prospects of the DAE program proposed by TEVTA in Punjab. The finding of the study revealed that teachers have different perceptions about the prospects of the DAE program. Teachers are seemed to be more anxious about the "physical facilities" provided by TEVTA to the institutions. They wanted to maintain a college building, equipped labs with technology, first aid facilities, fire-fighting facilities, hostel and transport facilities for DAE students in order to provide them with a good learning environment. Teachers are also more focused on the curriculum developed by TEVTA authorities and methods of teaching to use during classroom instructions. Findings further revealed that teachers are less worried about the social anxiety that people perceived about diploma holders. They seemed to be satisfied in this regard.

It might be argued that rural and urban teachers, according to their background information also more focused on "physical facilities" provided by TEVTA. It was found a significant difference in the perception of rural and urban teachers about physical facilities, which means they think differently about this factor. They wanted to focus more on physical infrastructure and facilities in the institutions in order to make students more comfortable and satisfied with their decisions to do DAE. Findings are supported by Shah (2013), and Aiviso (2003), who concluded that in technical institutions, there are no proper facilities are provided for DAE students. Buildings are not maintained, shortage of classrooms, equipment in labs, fire-fighting facilities, transport, hostel and first-aid facilities were not available properly. He also concluded that students of DAE are not socially acceptable as well. Therefore, there is a dire need to aware of people about the significance of the said diploma.

Findings further showed that teachers, according to their qualification, seemed to be more serious about the curriculum and physical facilities in the institutions. The curriculum should be developed according to the demand of the industry, which may help students to learn new skills. On the other hand, teachers have no differences of opinion about the DAE program according to their age. They have the same opinions about all the aspects of the DAE program. Shah (2004) found that the curriculum is out-dated it needs to be revised. It might be seen that teachers, according to their experience, have differences of opinions on administrative facilities and assessment system in TEVTA institutions. It can be seen that teachers, on the basis of their experience, are demanding good administrative facilities and a proper monitoring system for the DAE program. Shah (2013) revealed that no proper monitoring and evaluation system is found in DAE institutions. Funds are not enough for the proposed diploma.

Recommendations

Recommendations are as following.

1. The industry would be involved in planning and developing the DAE curriculum in order to meet international standards of technical education.
2. Assessment and monitoring system need to work efficiently in all colleges of technologies of Punjab.
3. Labs should properly be maintained and equipped with the required technologies.
4. There is a dire need for social acceptance of DAE graduates; therefore, it is recommended that awareness programs would be initiated through workshops, seminars and media.

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