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Teaching Strategies Employed by Teachers in teaching Skills to Students of Vocational Training Institutes of Punjab Pakistan

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ABSTRACT

Purpose: The main purpose of the study was to explore the teaching strategies employed by Technical and Vocational Education and Training (TVET) teachers in Vocational Training Institutes (VTIs) established by Punjab Vocational Training Council (PVTC) Pakistan

Design/Methodology/Approach: The population of the study was all 2423 teachers working in Vocational training Institutes (VTIs) of Punjab Vocational Training Council (PVTC). The sample of the study was 130 (males =69 and females= 61) teachers which were randomly selected from VTIs of PVTC. The instrument of the study was a self-developed and validated questionnaire, having the reliability of 0.87 (Cronbach Alpha). Data were collected personally and by post. Collected data were analyzed through descriptive and inferential statistics. ANOVA and Independent sample *t*-test were used to observe the differences in the responses of teachers related to their age, gender, experience, zones, professional qualification, and trainings.

Findings: The results of the study indicated that teachers were facing a lot of problems during teaching to TVET students like overcrowded classrooms, unavailability of equipment, lack of trainings and insufficient staff.

Implications/Originality/Value: The present study helps the authorities of TVET and Punjab Vocational Training Council by giving recommendations in the improvement and reformation of the current condition of TVET sector in Pakistan.

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Introduction

Technical and Vocational Education and Training (TVET) indicates that education and training which is

based on providing skills, abilities and knowledge needed for a particular job (Pioneer State High School, 2020). It is the piece of tertiary education and training which gives licensed training in work related and technical skills. It covers numerous professions and industries like trades and office work, retail, accommodation, and technology that is needed by the business and labour market. Most of the courses are offered according to the interests and the needs of individuals particularly in the field of agriculture, engineering, health, the travel industry and computer application (Clayton & Harris, 2018). Especially a large number of institutes have been running mushroom production, cultivation, cooking/baking housekeeping and many others. The main purpose is giving certain expertise and professional skills to individuals who can't acquire advanced education or are intrigued to acquire certain professional/vocational skills for their better professional carrier (Council for Technical Education and Vocational Training, 2012).

The educational policies of Pakistan also give great importance to Technical and Vocational Education and Training (TVET). Shortly after the independence, Scientific Research and Technical Education Committee for All Pakistan Educational Conference (1947) made some exceptionally great recommendations for building a sound and suitable foundation for technical and vocational education in Pakistan. The Committee proposed the establishment of a council for scientific and industrial research. The Committee recommended that this council ought to set up National Laboratories, and Technical Institutions in Pakistan (Ministry of Federal Education and Professional Training, 2018; Government of Pakistan, 1947). National Education Commission (1959) laid exceptional importance on technical and vocational education. The commission pushed on reinforcing technical and vocational education in the country to support the economy of the state.

The Education Policy (1972-1980) stressed making technical and vocational education mandatory for all students of classes VI-VIII. The National Educational Policy (1998-2010) supported the significance of technical and vocational education. The policy focused on granting the different types of skills and education to students which will assist them in their practical life if they decide to work after secondary education (Ministry of Education and Professional Training, 2018). Same as the past policies, the Education Policy (2009) has also given great importance to technical and vocational education and training. The suggestions made in this Education Policy (2009) are to incorporate and broaden technical and vocational education and training (TVET) as indicated by the needs of the area; to offer skills-based vocational training courses according to the local work market; to explain level-wise essentials for entry as an instructor in technical and vocational education and training (Government of Pakistan, 2009).

In Pakistan, numerous Government, semi-government, and Non-Government Organizations (NGOs) are providing technical and vocational education generating a semi-skilled and skilled labour force. Any individual can join Technical and Vocational Education and Training (TVET) courses through technical training centers or vocational institutes by government, non-government or private training providers (Shrestha, 2016). Technical Education and Vocational Training Authority (TEVTA) in Pakistan and Punjab Vocational Training Council (PVTC) in Punjab are playing out their roles as technical and vocational training providers on the central and provincial levels. All over the world, many developed and developing nations have been giving vocational education and technical training in many professions. Technical and Vocational Education and Training (TVET) programs cover a wide scope of professions and businesses, including skills and office work, retail, hospitality, and machines (Fatima, Bashir, Ashraf, & Nayab, 2020).

Punjab Vocational Training Council (PVTC) was established in October 1998 by the Government of Punjab, under the Punjab Vocational Training Council Act. It was created on the public and private relationship. This council utilizes Zakat Funds for decreasing poverty and providing demand-driven skill and training to deserving and depriving youth. There are 3,634 public and private technical and vocational institutes in Pakistan, in which Punjab Vocational Training Council is running 208 vocational institutes. The number of students, who can finish their graduation from these institutes is 40,000 per

annum. This council offers various courses related to 51 trades to needy young boys and girls.

Literature Review

According to the European Center for the Development of Vocational Training (2012), the progress of Technical and Vocational Education and Training (TVET) has become the main strategy for both developing and developed nations. Governments all over the world are at present trying to bring changes and improvements to their education and training structures, preparing frameworks to fulfill the need for a suitably skilled labour force in a developing global economy (Finnamore, 2020). Nations that need to remain in worldwide competition are facing high pressure to improve labour force quality. Vocational education is considered a significant base of social and economic development and a vital focal point of training. All developing and developed nations are focusing more on the advancement of Technical and Vocational Education and Training (TVET) to control the expanding joblessness, encouraging business (entrepreneurship), lack of money, and industrial development (Quisumbing, 2013). Despite doing all the efforts for improving TVET sector, this sector facing some of the following serious issues.

Shortage of Well Trained and Qualified Teachers

Tafida, Clement and Raihan (2015) noticed that developing nations generally experience the worst effects of the lack of qualified instructors. The issue of holding educators especially TVET instructors in educational institutions dated back to 1960s. The constant movement of instructors from teaching to better paying positions in different areas of the economy is evidently liable for the deficiency of educators of TVET. In fact, lack of TVET educators is a worldwide issue. For example, Kayode and Akanani (2016) revealed a huge deficiency of TVET instructors in the United States (US) particularly in states like Michigan, Virginia, South Dakota, Iowa and New York. As per International Labor Organization's (2010) report from some high income nations shows genuine or possible deficiencies of TVET instructors and coaches, outstandingly because of the aging of this labour force.

For instance, a report (2007) from Sweden demonstrated that the greater part of such educators were over 50 years of age. Noticeably, the issue has been compounded until very recently by challenges of rivaling frequently more worthwhile private endeavors and in quickly extending professions. Despite the new financial downturn that influenced the economy of numerous countries adversely, which might have cleared path for instructing of TVET to be more rewarding, deficiency of instructors exists in low-income nations particularly to meet the Education for all (EFA) objectives by 2015 (UNESCO, 2010). Reasons such as low fiscal motivations and general conditions of facilities in the area of education in contrast with the industrial, business and service endeavors have been recognized as a portion of the basic components for instructors' inclination for working in industries. As Simons, Harris, Pudney and Clayton (2015) put it, one of the difficulties confronting the recruitment of TVET experts (especially for public suppliers) is the salary gap between what can be acquired as workers in industries and the pay of the educators in TVET sector. According to Kayode and Akanani (2016), deficiency of talented and skilled vocational workers is so serious to the degree that vocational and technical education as well as financial development have been influenced.

Lack of Teaching and Learning Resources

Absence of exceptional instructing and learning offices in TVET foundations is a factor that has contributed to augmenting the holes among TVET and ventures. It has been seen that most TVET establishments in Nigeria actually utilize obsolete offices that are not, at this point significant in businesses as educating and learning facilities (Shakir,2020). This is in concurrence with UNESCO (2015) that under 1% of auxiliary instruction in Nigeria is arranged towards specialized and professional abilities, more terrible still, workshops for TVET at tertiary schooling level features dumps of obsolete and old machines, hardware and devices. This unpleasant condition could be ascribed to insufficient financing of education by the government at all levels in Nigeria. As indicated by Offei-Ansah (2011), TVET educators have restricted insight of life outside classroom and no admittance to assets materials

through which to emphasize significance. It has been seen that industries and companies are the end clients of TVET products, and as of now, skill exercises in industries are changing as the interest of the general public is changing while little or no change is occurring in TVET institutions hence there is a gap among TVET institutes and industries (Bhural, 2015).

Objective of the Study

The study was conducted to explore the teaching strategies adopted by teachers in teaching academics and demand-driven and employable vocational skills in various trades to needy youth enrolled in Technical and Vocational Education and Training program of 12 months duration at Vocational Training Institutes (VTIs) established by Punjab Vocational Training Council after passing matriculation.

Research Question of the Study

The study was conducted to answer the following question:

- What are the teaching strategies used by the teachers in teaching academics, ethics, life skill and demand-driven and employable vocational skills in various trades to needy young boys and girls enrolled in Vocational Education and Training Program of 12-month duration at Vocational Training Institutes (VTIs) after passing matriculation?

Methodology

The study was quantitative in nature and data were collected through questionnaires by the teachers working in Vocational Training Institutes (VTIs) of Punjab Vocational Training Council.

Population

The population of the study included 2423 TVET teachers working in 208 Vocational Training Institutes established in 36 districts of the Punjab province of Pakistan.

Sample

The sample of the study was 130 TVET teachers who were randomly selected from Vocational Training Institutes of Punjab Vocational Training Council.

Instrumentation

A questionnaire was developed on teaching strategies of teachers in teaching to TVET students. It comprised of two segments: Segment I consisted of details about demographic characteristics of the teachers including their institution's name, district, gender, zone, age, educational qualification, professional qualification, attended trainings and experience. Segment II was related to their teaching practices. Five point Likert type scale from strongly disagree to strongly agree was used for all strategies. The instrument was validated by a panel of experts having expertise in research field and the reliability of the questionnaire was determined by cronbach Alpha, which was 0.87.

Data/ Analysis

Data were analyzed by using different statistical techniques. One Way Analysis of Variance (ANOVA) and *t*-test was used to know frequency distribution of teachers' responses.

Table 1:
Frequency distribution of number of respondents on the basis of gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	69	53.1	53.1	53.1
Female	61	46.9	46.9	100.0
Total	130	100.0	100.0	

Table 1 shows the gender of respondent teachers of VTIs. Majority of the respondents were male 53.1%, and 46.9% were females in all four zones of Punjab.

Table 2:
Frequency distribution of respondents on the basis of age

	Frequency	Percent	Valid Percent	Cumulative Percent
20-25	5	3.8	3.8	3.8
26-30	19	14.6	14.6	18.5
31-35	37	28.5	28.5	46.9
36-40	21	16.2	16.2	63.1
41-45	31	23.8	23.8	86.9
46-50	15	11.5	11.5	98.5
above 50	2	1.5	1.5	100.0
Total	130	100.0	100.0	

Table 2 displays zone wise distribution of respondent teachers of VTIs, teaching in different districts of Punjab based on their age. It is apparent from the table that most of the teachers were in the age range of 31-35 years that is 37 (28.5%).

Table 3:
Frequency distribution of teachers based on their general education

	Frequency	Percent	Valid Percent	Cumulative Percent
Matric	21	16.2	16.2	16.2
FA/FSC	15	11.5	11.5	27.7
BA/BSC	57	43.8	43.8	71.5
MA/MSc	37	28.5	28.5	100.0
Total	130	100.0	100.0	

Table 3, displays zone wise distribution of respondent teachers of VTIs, teaching in different districts of Punjab based on their qualification. It is apparent from the table that most of the teachers were with BA/BSC qualification that is 57 (43.8%), and very few were with FA/FSc, 15 (11.5%).

Table 4:
Frequency distribution of teachers based on their professional education

	Frequency	Percent	Valid Percent	Cumulative Percent
AC/ refrigeration repair	21	16.2	16.2	16.2
screen printing and graphic arts	10	7.7	7.7	23.8
diploma in electrical	5	3.8	3.8	27.7
diploma in plumbing	5	3.8	3.8	31.5
DAE mechanical	13	10.0	10.0	41.5
diploma in beautician	29	22.3	22.3	63.8
dress making	6	4.6	4.6	68.5
computer operator	39	30.0	30.0	98.5
auto mechanic	2	1.5	1.5	100.0
Total	130	100.0	100.0	

Table 4 shows zone wise distribution of respondent teachers of VTIs, teaching in different districts of Punjab on the basis of their professional education. It is apparent from the table that most of the teachers were computer operators by profession that is 39 (30%). A very few were auto mechanic, 2 (1.5%).

Table 5:
Frequency distribution of teachers on the basis of training courses

	Frequency	Percent	Valid Percent	Cumulative Percent
1-5 workshops	60	46.2	46.2	46.2
6-10 workshops	48	36.9	36.9	83.1
11-15 workshops	22	16.9	16.9	100.0
Total	130	100.0	100.0	

Table 5 reflects zone wise distribution of respondent teachers of VTIs, teaching in different districts of Punjab on the basis of training courses. It is apparent from the table that most of the teachers attended 1-

5 workshops that is 60 (46.2%), 6-10 workshops attended by 48 (36.9%) and very few (16.9%) attended 11-15 workshops.

Table 6:

Frequency distribution of teachers on the basis of their teaching experience

	Frequency	Percent	Valid Percent	Cumulative Percent
1-5 years	34	26.2	26.2	26.2
6-10	28	21.5	21.5	47.7
11-15	27	20.8	20.8	68.5
16-20	29	22.3	22.3	90.8
21-25	12	9.2	9.2	100.0
Total	130	100.0	100.0	

Table 6 shows zone wise distribution of respondent teachers of VTIs, teaching in different districts of Punjab on the basis of their teaching experience. It is apparent from the table that most of the teachers were with 1-5 year experience that is 34 (26.2%) and very few (9.2%) were with 21-25 year experience.

Table 7:

ANOVA for differences in mean scores in teaching strategies of teachers on the basis of their age

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2521.729	6	420.288	1.734	.119
Within Groups	29819.071	123	242.431		
Total	32340.800	129			

Table 7 shows that there was no statistically significant difference among the teaching strategies of teachers of TVET institutions on the basis of their age: $F(6,123) = 1.734, p=.119$. It means that teachers' teaching strategies were not different on the basis of their age in teaching different courses to students.

Table 8:

ANOVA for differences in mean scores among the teaching strategies of teachers on the basis of education

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	703.503	3	234.501	.934	.426
Within Groups	31637.297	126	251.090		
Total	32340.800	129			

Table 8 shows that there was no statistically significant difference among the teaching strategies of teachers of VTIs on the basis of their basic education: $F(3,126) = 0.934, p=.426$. It means that teachers' teaching strategies were not different on the basis of their basic education in teaching different courses to students.

Table 9:

ANOVA for differences in mean scores among teaching strategies of teachers on the basis of professional qualification

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	7095.220	8	886.903	4.251	.000
Within Groups	25245.580	121	208.641		
Total	32340.800	129			

Table 9 shows that there was statistically significant difference among the teaching strategies of teachers of VTIs on the basis of their professional education: $F(8,121) = 4.251, p=.000$. It means that teachers' teaching strategies were different on the basis of their professional education in teaching different courses to students.

Table 10:

Post Hoc Comparison of teachers' teaching strategies on the basis of their professional qualification

(I) professional education of teachers	(J) professional education of teachers	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Ac/ refrigeration repair	screen printing and graphic arts	10.576	5.550	.611	-6.95	28.11

	diploma in electrician	-19.924	7.188	.135	-42.63	2.78
	diploma in plumbing	7.076	7.188	.987	-15.63	29.78
	DAE mechanical	7.092	5.098	.899	-9.01	23.19
	diploma in beautician	-6.455	4.139	.824	-19.53	6.62
	dress making	16.310	6.686	.273	-4.81	37.43
	computer operator	2.553	3.910	.999	-9.80	14.90
	auto mechanic	10.976	10.689	.983	-22.79	44.74
	ac/ refrigeration repair	-10.576	5.550	.611	-28.11	6.95
	diploma in electrician	-30.500*	7.912	.006	-55.49	-5.51
	diploma in plumbing	-3.500	7.912	1.000	-28.49	21.49
screen printing and graphic arts	DAE mechanical	-3.485	6.076	1.000	-22.68	15.71
	diploma in beautician	-17.031*	5.297	.043	-33.76	-.30
	dress making	5.733	7.459	.997	-17.83	29.29
	computer operator	-8.023	5.120	.821	-24.20	8.15
	auto mechanic	.400	11.189	1.000	-34.94	35.74
	ac/ refrigeration repair	19.924	7.188	.135	-2.78	42.63
	screen printing and graphic arts	30.500*	7.912	.006	5.51	55.49
	diploma in plumbing	27.000	9.135	.086	-1.86	55.86
diploma in electrician	DAE mechanical	27.015*	7.601	.015	3.01	51.03
	diploma in beautician	13.469	6.994	.598	-8.62	35.56
	dress making	36.233*	8.747	.002	8.61	63.86
	computer operator	22.477*	6.861	.036	.80	44.15
	auto mechanic	30.900	12.085	.216	-7.27	69.07
	ac/ refrigeration repair	-7.076	7.188	.987	-29.78	15.63
	screen printing and graphic arts	3.500	7.912	1.000	-21.49	28.49
	diploma in electrician	-27.000	9.135	.086	-55.86	1.86
diploma in plumbing	DAE mechanical	.015	7.601	1.000	-23.99	24.03
	diploma in beautician	-13.531	6.994	.591	-35.62	8.56
	dress making	9.233	8.747	.979	-18.39	36.86
	computer operator	-4.523	6.861	.999	-26.20	17.15
	auto mechanic	3.900	12.085	1.000	-34.27	42.07
	ac/ refrigeration repair	-7.092	5.098	.899	-23.19	9.01
	screen printing and graphic arts	3.485	6.076	1.000	-15.71	22.68
	diploma in electrician	-27.015*	7.601	.015	-51.03	-3.01
DAE mechanical	diploma in plumbing	-.015	7.601	1.000	-24.03	23.99
	diploma in beautician	-13.546	4.821	.123	-28.78	1.68
	dress making	9.218	7.129	.932	-13.30	31.74
	computer operator	-4.538	4.626	.987	-19.15	10.07
	auto mechanic	3.885	10.971	1.000	-30.77	38.54
	ac/ refrigeration repair	6.455	4.139	.824	-6.62	19.53
	screen printing and graphic arts	17.031*	5.297	.043	.30	33.76
	diploma in electrician	-13.469	6.994	.598	-35.56	8.62
diploma in beautician	diploma in plumbing	13.531	6.994	.591	-8.56	35.62
	DAE mechanical	13.546	4.821	.123	-1.68	28.78
	dress making	22.764*	6.478	.017	2.30	43.23
	computer operator	9.008	3.542	.222	-2.18	20.20
	auto mechanic	17.431	10.560	.775	-15.93	50.79
	ac/ refrigeration repair	-16.310	6.686	.273	-37.43	4.81
	screen printing and graphic arts	-5.733	7.459	.997	-29.29	17.83
	diploma in electrician	-36.233*	8.747	.002	-63.86	-8.61
dress making	diploma in plumbing	-9.233	8.747	.979	-36.86	18.39
	DAE mechanical	-9.218	7.129	.932	-31.74	13.30
	diploma in beautician	-22.764*	6.478	.017	-43.23	-2.30
	computer operator	-13.756	6.334	.431	-33.76	6.25
	auto mechanic	-5.333	11.794	1.000	-42.59	31.92
computer operator	ac/ refrigeration repair	-2.553	3.910	.999	-14.90	9.80

	screen printing and graphic arts	8.023	5.120	.821	-8.15	24.20
	diploma in electrician	-22.477*	6.861	.036	-44.15	-.80
	diploma in plumbing	4.523	6.861	.999	-17.15	26.20
	DAE mechanical	4.538	4.626	.987	-10.07	19.15
	diploma in beautician	-9.008	3.542	.222	-20.20	2.18
	dress making	13.756	6.334	.431	-6.25	33.76
	auto mechanic	8.423	10.472	.997	-24.66	41.50
	ac/ refrigeration repair	-10.976	10.689	.983	-44.74	22.79
	screen printing and graphic arts	-.400	11.189	1.000	-35.74	34.94
	diploma in electrician	-30.900	12.085	.216	-69.07	7.27
auto mechanic	diploma in plumbing	-3.900	12.085	1.000	-42.07	34.27
	DAE mechanical	-3.885	10.971	1.000	-38.54	30.77
	diploma in beautician	-17.431	10.560	.775	-50.79	15.93
	dress making	5.333	11.794	1.000	-31.92	42.59
	computer operator	-8.423	10.472	.997	-41.50	24.66

Table 10 shows the result of post hoc analysis of ANOVA to identify teaching strategies of teachers of TVET institutions on the basis of their professional qualification showing $F(8,121) = 4.251, p=.000$. Table values show that, teachers' responses vary about their teaching strategies on the basis of their professional qualification in teaching different courses to students. It is apparent that responses of teachers who have diploma in Ac/ refrigeration repair had significant difference with the responses of those who have diploma in electrician. Moreover, the teachers having the diploma in screen printing and graphic arts had a significant difference with the responses of those who have diploma in beautician. It is also evident from the table values that teachers having the diploma in electrician had significant difference with the responses of those who have diploma in mechanical, dress making and computer operator. DAE mechanical diploma holder had a significant difference with the responses of teachers having diploma in electrical and screen printing and graphic arts. Teachers having diploma in beautician had a significant difference with the responses of teachers having diploma in dress making. The table values also shows that the teachers having diploma in dress making and computer operator had a significant difference with the responses of teachers having diploma in electrician and beautician, while the rest of the teachers had no significant difference in their responses related to their teaching strategies.

Table 11:
ANOVA for differences in mean scores in teaching strategies of teachers on the basis of trainings

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3510.383	6	585.064	2.496	.026
Within Groups	28830.417	123	234.394		
Total	32340.800	129			

Table 11 shows that there was statistically significant difference among the teaching strategies of teachers of TVET institutions on the basis of their trainings: $F(6,123) = 2.496, p=.026$. It means that teachers' teaching strategies were different on the basis of their trainings in teaching different courses to students.

Table 12:
Post Hoc Comparison of teachers' teaching strategies on the basis of training

(I) training courses	(J) training courses	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
1-5 workshops	6-10 workshops	7.425*	3.006	.039	.30	14.55
	11-15 workshops	6.507	3.924	.225	-2.80	15.81
6-10 workshops	1-5 workshops	-7.425*	3.006	.039	-14.55	-.30
	11-15 workshops	-.918	4.079	.972	-10.59	8.76
11-15 workshops	1-5 workshops	-6.507	3.924	.225	-15.81	2.80
	6-10 workshops	.918	4.079	.972	-8.76	10.59

Table 12 shows the result of post hoc analysis of ANOVA to identify teaching strategies of teachers of TVET institutions on the basis of their trainings showing $F(6,123) = 2.496, p=.026$. Table values show

that teachers' responses vary about their teaching strategies on the basis of their nature of training in teaching different courses to students. It is apparent that responses of teachers who have attended 1-5 workshops had significant difference with the opinion of those attended 6-10 workshops. However, teachers attended 11-15 workshops were of the same opinion as teachers attended less workshops.

Table 13:**ANOVA for differences in mean scores among teaching strategies of teachers on the basis of experience**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1811.701	4	452.925	1.854	.123
Within Groups	30529.099	125	244.233		
Total	32340.800	129			

Table 13 shows that there was no statistically significant difference among the teaching strategies of teachers of TVET institutions on the basis of their age: $F(4,125) = 1.854$, $p=.123$. It means that teachers' teaching strategies were not different on the basis of their experience in teaching different courses to students.

Table 14:**ANOVA for differences in mean scores among teaching strategies of teachers on the basis of zones**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3508.764	3	1169.588	5.111	.002
Within Groups	28832.036	126	228.826		
Total	32340.800	129			

Table 14 shows that there was statistically significant difference among the teaching strategies of teachers of TVET institutions on the basis of their zones: $F(3,126) = 5.111$, $p=.002$. It means that teachers' teaching strategies were significantly different on the basis of zones in teaching different courses to students.

Table 15:**Post Hoc Comparison of teachers' teaching strategies on the basis of zones**

(I) areas of Punjab	(J) areas of Punjab	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Zone1 (Gujrat, Sargodah, Jehlum, Chakwal, Khusahb, Mianwali, Jhang, Attock, Rawalpindi, Mandibahaudin, Chiniot, Bhakar)	Zone2	-.940	4.829	.997	-13.51	11.63
	Zone3	-3.352	5.445	.927	-17.53	10.82
	Zone4	8.885	4.642	.227	-3.20	20.97
	Zone1	.940	4.829	.997	-11.63	13.51
Zone2 (Gujrat, Sargodah, Jehlum, Chakwal, Khusahb,	Zone1 (Gujrat, Sargodah, Jehlum, Chakwal, Khusahb,					

Mianwali, Jhang, Attock, Rawalpindi, Mandibahaudin, Chiniot, Bhakar)	Zone3 (Vihari, Bahawalpur, R.Y. Khan, Khanewal, Lodhran, Bahawalnagar)	-2.412	4.215	.940	-13.39	8.56
	Zone4 (T.T. Singh, Sahiwal, Pakpatan, Okara, Faisalabad, Kasur, Lahore, Sheikhpura, Nankana, Sialkot, Gujranwal, Hafizabad, Narowal)	9.825*	3.109	.011	1.73	17.92
	Zone1 (DG3.352 khan, Rajanpur, Muza fargarh, Multan, Layyah)		5.445	.927	-10.82	17.53
	Zone2 (Gujrat, Sargodha, Jehlum, Chakwal, Khushab, Mianwali, Jhang, Attock, Rawalpindi, Mandibahaudin, Chiniot, Bhakar)	2.412	4.215	.940	-8.56	13.39
Zone3 (Vihari, Bahawalpur, R.Y. Khan, Khanewal, Lodhran, Bahawalnagar)	Zone4 (TT12.237* singh, Sahiwal, Pakpatan, Okara, Faisalabad, Kasur, Lahore, Sheikhpura, Nankana, Sialkot, Gujranwal, Hafizabad, Narowal)		3.999	.014	1.83	22.65
	Zone1 (DG-8.885 khan, Rajanpur, Muza fargarh, Multan, Layyah)		4.642	.227	-20.97	3.20
Zone4 (TT singh, Sahiwal, Pakpatan, Okara, Faisalabad, Kasur, Lahore, Sheikhpura, Nankana, Sialkot, Gujranwal, Hafizabad, Narowal)	Zone2 (Gujrat, Sargodha, Jehlum, Chakwal, Khushab, Mianwali, Jhang, Attock, Rawalpindi, Mandibahaudin, Chiniot, Bhakar)	-9.825*	3.109	.011	-17.92	-1.73
	Zone3 (Vihari, Bahawalpur, R.Y. Khan, Khanewal, Lodhran, Bahawalnagar)	-12.237*	3.999	.014	-22.65	-1.83

Table 15 shows the result of post hoc analysis of ANOVA to identify teaching strategies of teachers of TVET institutions on the basis of the zones showing $F(3,126) = 5.111$, $p = .002$. Table values show that, teachers' responses vary about their teaching strategies on the basis of their zones in teaching different courses to students. It is apparent that responses of teachers from zone 3 had significant difference ($p = .014$) with the responses of those teachers who are from zone 4. Moreover, the teachers from zone 4 also had a significant difference with responses of teachers from zone 2 and zone 3 ($p = 0.01$ and $p = .001$).

Table 16:
Independent sample t-test for comparison of teachers' responses on teaching strategies on the basis of gender

Variables	Gender	N	Mean Scores	Df	t-value	Sig.
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Male	69	177.57	128	-2.860	.005
Female	61	185.31			

Table 16 indicates that an independent sample *t*-test was conducted using Leven's test of equality of variance to compare the opinion of teachers about the teaching strategies for TVET students on the basis of their gender. There was significant difference in the mean scores of male and female teachers about their teaching strategies. The magnitude of difference in the means also existed. It means that the male and female teachers were using different teaching strategies.

Discussion

On the basis of findings, it is indicated that vocational graduates are having problem in implementation of their learning at their workplaces as there is no appropriate equipment, materials and resources available to TVET teachers. In addition, instructors do not get the chance to attend training workshops every year but they tried their level best to improve the academics, technical and vocational skills of their students by using different teaching strategies.

The TVET infrastructure, the capacity and quality training to teaching staff is in need of up-gradation in existing vocational training institutions in Punjab. It is also noteworthy that a significant difference has been found among the teaching strategies of TVET teachers on the basis of their trainings and professional qualification. It was examined that teachers having more trainings and professional qualification in their related trade were using better and variant teaching strategies. It encourages the concept of encouraging teachers with more in-service academic and professional trainings.

Recommendations

The quality of TVET programs should be improved. This can be attained through providing appropriate facilities, equipment, useable tools, and by providing sufficient trainings to TVET persons. There should be suitable provision of teaching materials. Provision of in-service training for TVET personnel. Scholarships/grants should be provided to TVET teachers/ instructors. The limited number of students should be kept in one section to sustain quality of education and facilitate TVET teachers during execution of their duties. There should be proper monitoring and scrutiny of the implementation of TVET programs by government.

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