An Empirical Investigation of Vocational Education and Training Programs: 
A Case of Vocational Training Institutes of Southern Punjab, Pakistan

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Abstract: The purpose of this research is to conduct the formative evaluation of vocational education and training (VET) under the Kirkpatrick model in the vocational training institutes of southern Punjab. This study also measures the impact of Vocational Education and Trainings dimensions: quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff trainee relationship, staff selection and qualification, physical resources, management and organization and interrelation with industry on reaction and learning of trainees. The results show that among all the training dimensions, quality of contents, physical resources and inter-relation with industry have positive and significant effect on reaction and learning.

Key words: Vocational Education and Training · Training Dimensions · Kirkpatrick Model

INTRODUCTION

Training is an important activity of Human Resource Development (HRD). HRD is a process of improving human efficiency through personnel training and development to improve the performance [1]. Skill development and training are of vital importance in individual, organizational and overall economic growth of an economy as well as equally essential for High Performance Human Resource Systems [2]. Training is the combination of activities that is helpful for a worker to do his work more efficiently [3]. “Employability is not the same as employment, just as education is not the same as training” [4]. According to Benson [5] training is an important factor for offering more chances for career development of employees. There are different types of trainings and vocational training is one of them. Vocational Education and Training (VET) plays an important role in alleviation of poverty from the society and provide training for employability [6]. VET considered as a solution for unemployment and poverty alleviation [7, 8]. With the rapid escalation of industrialization and modernization, there is growing demand for vocationally trained human resources. In views of Tilak [9], there is persistence industrialization in service sector due to which this sector requires human resource with entrepreneurial, secretarial and vocational skills. Apart from services sector, other small scale and cottage industry like transport and trade require commercially educated work force to run business. Furthermore, Tilak [9] discussed that vocational training has been considered as the solution of the educational problems in the economies of developing countries. It is assumed that various educational problems could be answered by modifying the secondary education curriculum. Vocational education and training is provided as a part of national education system in Germany, France and Netherland [10].

There is a great importance of vocational education and training evaluation for industrial growth in Pakistan. Mustafa et al. [2] in their research work particularly focused on the vocational training, policies related to vocational training and the impact of vocational training on the industrial sector in Pakistan. The results of
vocational training evaluation are helpful in solving the problems and defining the [11]. Gitomer [12] endorsed that vocational training evaluation is essential to find out good trainer that leads to the success of training program. Evaluation of vocational training is helpful in measuring the productivity and effectiveness of institute [13]. So, evaluation of vocational training is very useful to improve the efficiency of the organization and also the training process itself.

The researchers have put an effort to motivate the tendency of vocational education and training evaluation in Pakistan especially in the southern Punjab because there has been less attention given to this sector in Pakistan and third world countries. An evaluation of vocational training has been measured under the Kirkpatrick model. This criterion is constructed on evidences, facts and valuation of outcomes. This methodical evaluation is helpful in recognizing the major vocational training features that influence on the results of evaluation. This research will be of significance for the forthcoming researchers, vocational training institutions and for the public sector institutions as it provides systematic emphasis on the reaction and learning of trainees.

The objective of this research is to assess the effectiveness of Vocational Education and Training program under the Kirkpatrick model in the Vocational Training Institutes of southern Punjab. To evaluate the effect, researchers have analyzed the effect of ten independent key dimensions namely quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff-trainee relationship, staff selection and qualification, physical resources, management and organization and interrelation with industry on the dependent variables like reaction and learning.

**Research Question:** To what extent Vocational Education and Training dimensions: quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff-trainee relationship, staff selection and qualification, physical resources, management and organization and interrelation with industry, are influencing the reaction and learning of trainees?

**Literature Review**

**Vocational Education and Training:** According to Reid & Barrington [14] “Education is for life while training is for work”. “Employability is not the same as employment, just as education is not the same as training”, [4]. HRD is a process of improving human efficiency through personnel training and development to improve the performance [1]. Training is the combination of activities that is helpful for a worker to do his work more efficiently [3]. There are different types of trainings and vocational education and training is one of them. Vocational training and learning has an important role in the development of individual and group [15]. Vocational Training is one of the important factors in the economic development of any organization [16]. Vocational education and training (VET) provides skills to people for a specific job. VET is generally related to physical and hands on activities associated to a particular trade, vocation or occupation. It may sometimes be considered as technical education since the trainees gain proficiency and capability concerned with different techniques.

Training and development has been accepted as an important factor in the growth of socio economic development [15]. In the developing countries, Technical and vocational education is becoming valuable policy issue [17-19] describes the fact that the trained workforce is the main focus of attention in most of the development programs. Asian countries have placed particular focus on vocational education in formal and non-formal educations system. That’s why world has observed swift economic growth of the Asian Tigers. The reason behind their speedy growth is heavy investment in both physical and human capital. These countries focused more on the enhancement of labor productivity which was fruitful for both the salaried and self employed laborers [2].

Vocational education and training (VET) plays an important role in alleviation of poverty from the society and provide training for employability [6]. VET considered as a solution for unemployment and poverty alleviation in Africa [7]. VET has a major contribution in the development of the economy in Africa [8]. The tendency towards learning the vocational education and training is increasing rapidly in the young people of South Africa, the Netherlands and England [20]. Tilak [9] describes that vocational training is also perceived as a measure to establish equity. Moreover, it will help to eliminate inequality between urban and poor population. Usually, urban population is equipped with education from elite education systems because of which rural people find themselves deprived of good employment opportunities. Costea Carmen (2012)[21] stated that vocational training is helpful to reduce the poverty and unemployment. Skill shortage is the main reason of unemployment in South Africa [22].
Literature has also given very much importance to the identification of linkages between vocational training providers and industry. Pagtakhan and Rock [23] argue that maintaining successful collaboration between Technical and Vocational Education and Training (TVET) and industry is necessary for the national economy. According to Callan and Ashworth [24], this association is also critical to design the TVET curriculum. Comyn [25] highlighted that industry and VET linkage can particularly absorb a broad range of activities and mechanisms, from identification of the required skills to laying down skill standards and delivery of technical effort into learning and teaching resources. UNESCO and ILO [26] in their report recommended that “VET policy design and delivery should be achieved through a new partnership between government, employers, professional associations, industry and employees”. To attain the objective of giving good quality TVET for students and to make the efficient utilization of resources, it is indispensable that there should be clear coordination between place of work and TVET system [27, 28]. This cooperation should involve utilization of resources towards those careers and occupation where there is more demand of particular skills and better future prospects. Callan and Ashworth [24] stated that there is a belief among the partners of the industries that the effectiveness of their partnerships with training institutions is fundamental for generating knowledge and skills to resolve the problems. As indicated by Byrne [29] a wide-ranging vocational education and training (VET) system requires close relationships with industry and business at all levels.

Keeping in view the above discussion in literature review, it is now clear that vocational training is one the most significant activity of human resource management activities. Provision of vocational training and development of the human resource has now become standard practice worldwide which is carried out by many public and private sector organizations. These organizations are also highly motivated in spending a considerable amount on training and development. The researcher has come to an agreement with the views mentioned above that vocational training can solve many problems at workplaces and it delivers skills and knowledge to the labor force which in turn make success easy for the organizations. But it has also been observed that these organizations are not focusing enough on the evaluation of vocational training programs. The researcher establishes that evaluation of vocational training programs strongly affects trainees and effects can be observed in the form of conduct, performance, knowledge and skill. Higher managements of vocational training organizations can be directed about the development of programs under the light of results in the form of facts and figures. Vocational training evaluation is recommended in all training models but in practice it is the most abandoned and overlooked.

**Vocational Education and Training Evaluation:**
Evaluation of vocational education and training is the process of assessing the usefulness of the VET program. This process of assessment is completed by gathering data on whether the trainees were satisfied with the contents of the vocational training program. According to Raab *et al.* [30] evaluation of vocational training is a systematic examination of data that was obtained before and after training. Most of the company managers does not spare appropriate time for the evaluation of vocational training program [12]. According to Signe & Evija [11], there is a shortage of competency in the evaluation of training. PVTC is spending annually billions of rupees on vocational training programs conducted by VTI’s of Punjab, Pakistan [31] but there is less attention on the evaluation of vocational training.

According to Signe & Evija [11], the results of vocational training evaluation are helpful in solving the problems and defining the goal. Vocational training assessment has been merged for measuring the competency of vocational programs at international level [32]. Liviu [16] stated that the evaluation of training methods and technical solutions are used as authentication of the vocational training. For assessing the success of vocational training program, the training employment has been used in the labour market [32-34]. Evaluation of vocational institutions is helpful in improving the standard of livings for individuals [34]. Evaluation of vocational training is helpful in measuring the productivity and effectiveness of institute [13, 43]. In France, a research has been conducted on the mismatch of vocational training and job that may be used in the evaluation of vocational training program by the public authorities [35, 44, 45]. Training evaluation is useful to improve the results of an organization [36]. So it is clearly depicts from literature that evaluation of vocational training is very important in the training.

**Research Methodology**

**Theoretical Framework:** Theoretical framework represents the logical relationship between dependent and independent variables. Kirkpatrick model [37-42] for training evaluation has been used to design the theoretical framework through reaction.
In this theoretical framework, the researcher investigated the impact of ten variables: quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff trainee relationship, staff selection and qualification, physical resources, management and organization and interrelation with industry.


**Relationship Between Variables:** According to this study: quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff trainee relationship, staff selection and qualification, physical resources, management and organization and interrelation with industry are considered as independent variables while reaction, learning and reaction and learning together are dependent variables for a vocational training program.

\[
R = \beta_0 + \beta_{QOC} + \beta_{TM} + \beta_{AAE} + \beta_{SOT} + \beta_{CAG} + \beta_{STR} + \beta_{SSQ} + \beta_{PHR} + \beta_{MAO} + \beta_{IWI} + \varepsilon
\]

\[
L = \beta_0 + \beta_{QOC} + \beta_{TM} + \beta_{AAE} + \beta_{SOT} + \beta_{CAG} + \beta_{STR} + \beta_{SSQ} + \beta_{PHR} + \beta_{MAO} + \beta_{IWI} + \varepsilon
\]

\[
RL = \beta_0 + \beta_{QOC} + \beta_{TM} + \beta_{AAE} + \beta_{SOT} + \beta_{CAG} + \beta_{STR} + \beta_{SSQ} + \beta_{PHR} + \beta_{MAO} + \beta_{IWI} + \varepsilon
\]
where dependent variables are

R = Reaction
L = Learning
RL = Reaction and Learning

\[ \beta_0 = \text{Constant of proportionality} \]
QOC = Quality of Contents
TM = Teaching method
AAE = Assessment and Examination
SOT = Selection of Trainees
CAG = Counseling and career guidance
STR = Staff trainee relationship
SSQ = Staff selection and qualification
PHR = Physical resources
MAO = Management and organization
IWI = Interrelation with industry
\[ \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10} \text{are independent variables} \]
\[ \varepsilon = \text{Model error factor} \]

**Hypothesis Development:** Following hypothesis are developed to verify the relationship between variables.

**H_1:** Quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff trainee relationship, staff selection and qualification, physical resources, management and organization and interrelation with industry have a significant effect on learning.

**H_2:** Quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff trainee relationship, staff selection and qualification, physical resources, management and organization and interrelation with industry have a vital effect on reaction and learning.

**Research Design**

**Population and Sample:** There are a number of organizations and institutions that are providing vocational education and training all over the Pakistan but this research is focused on the vocational training institutes of southern Punjab working under the umbrella of Punjab Vocational Training Council (PVTC) Punjab, Pakistan. In twelve districts of southern Punjab: Vehari, Bahawalnagar, Bahawalpur, Khanewal, Multan, Lodharan, Rahim Yar Khan, Dera Ghazi Khan, Muzaffargarh, Rajanpur, Layyah and Bhakar, there are 49 Vocational Training Institutes in operation. 300 questionnaires were distributed among the graduates of VTIs out of which 219 valid entries were considered for analysis.

**Reliability Analysis and Descriptive Statistics:** Table 1 shows that the mean values of quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff trainee relationship, staff selection and qualification, physical resources, management and organization, interrelation with industry, reaction and learning disclose agreement of the respondents and standard deviations reveals a fewer variation in the responses. The results explain overall agreement in respect of all the dimensions.

**Table 1: Number, Mean, Standard Deviation and Range**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number</th>
<th>Mean</th>
<th>Std.</th>
<th>Dev. Range</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
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<td>.411</td>
<td>.491</td>
<td>1</td>
<td>4</td>
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<tr>
<td>Teaching Method (TM)</td>
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<td>2.00</td>
<td>.528</td>
<td>.653</td>
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<td>5</td>
</tr>
<tr>
<td>Assessment and Examination (AAE)</td>
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<td>2.00</td>
<td>.591</td>
<td>.653</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Selection of Trainees (SOT)</td>
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<td>2.04</td>
<td>.511</td>
<td>.591</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Counseling and Career Guidance (CAG)</td>
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<td>2.13</td>
<td>.831</td>
<td>.942</td>
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<td>4</td>
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<tr>
<td>Staff Trainee Relationship (STR)</td>
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<td>.591</td>
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<td>.489</td>
<td>.551</td>
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<td>4</td>
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<tr>
<td>Physical Resources (PHR)</td>
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<td>.426</td>
<td>.492</td>
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<td>4</td>
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<tr>
<td>Management and Organization (MAO)</td>
<td>219</td>
<td>1.94</td>
<td>.492</td>
<td>.534</td>
<td>1</td>
<td>4</td>
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<tr>
<td>Interrelation with Industry (IWI)</td>
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<td>2.05</td>
<td>.653</td>
<td>.534</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Learning (L)</td>
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<td>.360</td>
<td>.507</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Reaction (R)</td>
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<td>1.91</td>
<td>.497</td>
<td>.507</td>
<td>1</td>
<td>5</td>
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<tr>
<td>Training Dimensions (TD)</td>
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<td>.307</td>
<td>.653</td>
<td>1</td>
<td>4</td>
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<tr>
<td>Training Evaluation (TE)</td>
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<td>1.92</td>
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<td>.507</td>
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<td>5</td>
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<tr>
<td>Valid N (list wise)</td>
<td>219</td>
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</table>
Table 2: Inner-Item Consistency - Cronbach’s α

<table>
<thead>
<tr>
<th>Variables/Dimensions</th>
<th>Cronbach’s α</th>
<th>No of Items</th>
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</thead>
<tbody>
<tr>
<td>Quality of Contents</td>
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<td>12</td>
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<tr>
<td>Teaching Method</td>
<td>.545</td>
<td>7</td>
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<tr>
<td>Assessment and Examination</td>
<td>.542</td>
<td>4</td>
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<tr>
<td>Selection of Trainees</td>
<td>.387</td>
<td>3</td>
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<tr>
<td>Counseling and Career Guidance</td>
<td>.754</td>
<td>4</td>
</tr>
<tr>
<td>Staff-Trainee Relationships</td>
<td>.464</td>
<td>3</td>
</tr>
<tr>
<td>Staff Selection and Qualification</td>
<td>.646</td>
<td>7</td>
</tr>
<tr>
<td>Physical Resources</td>
<td>.813</td>
<td>23</td>
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<tr>
<td>Management and Organization</td>
<td>.752</td>
<td>9</td>
</tr>
<tr>
<td>Interrelation with Industry</td>
<td>.658</td>
<td>9</td>
</tr>
<tr>
<td>Learning</td>
<td>.812</td>
<td>6</td>
</tr>
<tr>
<td>Reaction</td>
<td>.755</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 3: Inter-correlations among Independent Variables

<table>
<thead>
<tr>
<th>QOC</th>
<th>TM</th>
<th>AAE</th>
<th>SOT</th>
<th>CAG</th>
<th>STR</th>
<th>SSQ</th>
<th>PHR</th>
<th>MAO</th>
<th>IWI</th>
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</thead>
<tbody>
<tr>
<td>.754</td>
<td>.587</td>
<td>.523</td>
<td>.357</td>
<td>.040</td>
<td>.281</td>
<td>.305</td>
<td>.434</td>
<td>.408</td>
<td>.342</td>
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<td>.587</td>
<td>1</td>
<td>.480</td>
<td>.374</td>
<td>.330</td>
<td>.430</td>
<td>.493</td>
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<td>.219</td>
<td>.219</td>
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<td>.219</td>
<td>.219</td>
<td>.219</td>
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<tr>
<td>.305</td>
<td>.430</td>
<td>.219</td>
<td>.219</td>
<td>.219</td>
<td>.219</td>
<td>1</td>
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<td>.219</td>
<td>.219</td>
<td>.219</td>
<td>1</td>
<td>.219</td>
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<tr>
<td>.408</td>
<td>.522</td>
<td>.219</td>
<td>.219</td>
<td>.219</td>
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<td>.219</td>
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<td>.219</td>
<td>.219</td>
<td>1</td>
</tr>
</tbody>
</table>

* p<0.05
** p<0.01

Table 2 explains the Cronbach’s alpha for all the dimension of vocational education and training program. Cronbach’s describes that how much the variables are interrelated positively (Sekran, 2003). This statistics clearly shows the trends of trainees and future action plan for researchers. It is very clear from the Table 2 that Cronbach’s alpha for physical resources and learning are 0.813 and 0.812 respectively which are excellent and shows that the dimension are very relevant. The Cronbach’s α for quality of contents, counseling and career guidance, management and organization and reaction are 0.724, 0.754, 0.752 and 0.755 respectively which are good and depicts the good relevancy. The value of Cronbach’s alpha for staff selection and qualification is 0.646 and interrelation with industry is 0.658 which are satisfactory having fairly relevant.

Furthermore, Table 3 shows inter correlations among ten independent variables: quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff trainee relationship, staff selection and qualification, physical resources, management and organization, interrelation
with industry. These results show that all independent variables were found positively and significantly correlated.

Multiple Regression Analysis: In this study, the researchers simply used standard/simultaneous multiple regressions method. This method is also known as simultaneous method because of the fact that independent variables are positioned simultaneously into the regression model. Multiple R processes the strength of association among dependent and independent variables. Regression analysis is used to measure the effect of independent variables: Quality of Contents (QOC), Teaching Method (TM), Assessment and Examination (AAE), Selection of Trainees (SOT), Counseling and Career Guidance (CAG), Staff Trainee Relationship (STR), Staff Selection and Qualification (SSQ), Physical Resources (PHR), Management and Organization (MAO) and Interrelation with Industry (IWI) on the dependent variables: reaction, learning and reaction & learning. Regression analysis is categorized according to three independent variables. Analysis of Variance (ANOVA) is used to match means of two groups of the study.

- Reaction
- Learning
- Reaction and Learning

Table 4 clearly depicts that F statistics probability is 11.974 for regression model which is significant at \( p < 0.01 \). The value of R (0.604) describes the strong multiple correlation between the independent and dependent variable. The coefficient of determination \( R^2(0.365) \) disclose that there is 36.5% variation caused by Quality of Contents (QOC), Teaching Method (TM), Assessment and Examination (AAE), Selection of Trainees (SOT), Counseling and Career Guidance (CAG), Staff Trainee Relationship (STR), Staff Selection and Qualification (SSQ), Physical Resources (PHR), Management and Organization (MAO) and Interrelation with Industry (IWI) in dependent variable of reaction.

The beta coefficient associated with the independent variable physical resources (PHR) \( (\beta = 0.278, p \leq 0.01) \) shows that availability of physical resources strongly influences the trainee’s reaction in VET as indicated by the highly significant p value of 0.001. The beta coefficient of quality of content (CQC) \( (\beta = 0.183, p \leq 0.05) \) indicates that trainee’s reaction is directly affected by the quality of content. The beta coefficient associated with inter-relationship with industry (IWI) \( (\beta = 0.169, p \leq 0.05) \) also have a positive and significant effect on trainee’s reaction. Due to limited sample, less awareness and geographic area of southern Punjab, other variables have insignificant impact on reaction.

The value of beta coefficient associated with training dimension, inter-relationship with industry (IWI) \( (\beta = 0.583, p \leq 0.01) \) clearly represent that this variable has positive and significant effect on trainee’s learning. Quality of Content is another explanatory variable which has positive and significant effect on learning as shown by its p value which is less than 0.01 i.e. 0.007. The beta coefficient of teaching methodology (TM) \( (\beta = -0.156, p \leq 0.10) \) has indirect and marginally significant effect on trainee’s learning. This indirect effect is because of the fact that there are heterogeneous teaching methodologies for different vocational training programs in VTIs of southern Punjab. The beta coefficient of counseling and career guidance (CAG) \( (\beta = 0.149, p \leq 0.10) \) shows that CAG has positive effect on trainee’s learning whereas this effect is marginally significant. Due to limited sample, less awareness and geographic area of southern Punjab other variables have insignificant impact on learning.

Table 5 clearly depicts that F statistics probability is 11.629 for regression model which is significant at \( p < 0.01 \). The value of R (0.599) describes the strong multiple correlation between the dependent and independent variable. The coefficient of determination \( R^2(0.359) \) disclose that there is 35.9% variation caused by Quality of Contents (QOC), Teaching Method (TM), Assessment and Examination (AAE), Selection of Trainees (SOT), Counseling and Career Guidance (CAG), Staff Trainee Relationship (STR), Staff Selection and Qualification (SSQ), Physical Resources (PHR), Management and Organization (MAO) and Interrelation with Industry (IWI) in dependent variable of reaction.

<table>
<thead>
<tr>
<th>Quality of Contents</th>
<th>Coefficient</th>
<th>‘t’ Values</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>.117</td>
<td>1.365</td>
<td>.174</td>
</tr>
<tr>
<td>Assessment and Examination</td>
<td>.060</td>
<td>.882</td>
<td>.379</td>
</tr>
<tr>
<td>Selection of Trainees</td>
<td>.080</td>
<td>1.110</td>
<td>.268</td>
</tr>
<tr>
<td>Counseling and Career Guidance</td>
<td>.058</td>
<td>.689</td>
<td>.492</td>
</tr>
<tr>
<td>Staff-Trainee Relationships</td>
<td>-.108</td>
<td>1.512</td>
<td>.132</td>
</tr>
<tr>
<td>Staff Selection and Qualification</td>
<td>-.093</td>
<td>1.177</td>
<td>.241</td>
</tr>
<tr>
<td>Physical Resources</td>
<td>.278*</td>
<td>3.300</td>
<td>.001</td>
</tr>
<tr>
<td>Management and Organization</td>
<td>.019</td>
<td>.237</td>
<td>.813</td>
</tr>
<tr>
<td>Interrelation with Industry</td>
<td>.169**</td>
<td>2.177</td>
<td>.031</td>
</tr>
</tbody>
</table>

* p \leq 0.01, ** p \leq 0.05, *** p \leq 0.10
Hypothesis Testing: Hypothesis testing has been carried out by using multiple regression analysis. With respect to hypothesis 1, results in table 4 indicate significant F value (F = 11.974, p < 0.01) which proves the fitness of the model. Moreover, physical resources, quality of content and interrelation with industry have significant effect on reaction. Therefore, we are partially failed to reject H1.

As far as H2 is concerned, it is also partially failed to reject. Results in table 5 show that quality of content, interrelation with industry and counseling and career guidance positively and significantly affect learning. Whereas teaching methodology also significantly affects learning but indirectly. Significant F value (F = 11.629, p < 0.01) confirm that the model is good fit.

Table 6 shows the outcomes about H3. It indicates that quality of content, physical resources and interrelation with industry positively and significantly influenced the trainee’s reaction and learning. Significant F value (F = 17.435, p < 0.01) confirms that the model is good fit. Again in case of H3 we are partially failed to reject it.

CONCLUSION

The output of descriptive statistics shows that there is positive and significant relationship among the dependent and independent variables like quality of contents, physical resources and interrelation with industry. The value of beta for quality of contents, physical resources and interrelation with industry are positive and significant which shows direct relationship with dependent variables. However, teaching methodology has negative and significant effect on learning. This inverse relationship is because of Pakistan is underdeveloped country and there is less regulatory environment. This inverse relationship also depicts that there is less attention on these variable in Vocational Education and Training environment and more emphasis is required on this training dimension to improve the quality of VET. Due to limited sample, less awareness and geographic area of southern Punjab, other training dimensions have insignificant impact on reaction and learning.
Standard procedure of multiple regression confirmed that among the ten independent variables some have positive relationship with the dependent variable reaction and learning while some have negative relationship. Multiple $R \neq 0$ clearly describes the positive and significant relationship among independent variables. Training dimensions and reaction & learning were correlated directly and found as logical extensions of each other. Model is proved to be fit as shown by the significant relationship ($R^2 \neq 0$) between ten independent variables and dependent variables like reaction, learning and reaction and learning i.e. ($p<0.001$).

This study shows that vocational education and training is one the most significant activity of human resource management activities which is very helpful in solving the workplace problems and also identifies the weaknesses and strengths of VET. This research established that evaluation of vocational training programs strongly affects trainees and effects can be observed in the form of conduct, performance, knowledge and skill. Reaction and learning are established as important factors to evaluate the VET under the Kirkpatrick model.

**Recommendations:** Vocational training evaluation should be particularly discussed in human resource management and vocational training programs. Evaluation of vocational training should be considered to enhance the quality of vocational training by taking proper feedback from trainees time by time. The future training needs should be defined on the behalf of outcomes of evaluation. Higher management should concentrate for evaluation of vocational education and training and should motivate training staff to stream line the process of evaluation. As indicated before that selection of trainee (SOT), staff trainee relationship (STR), management and organization (MAO), staff selection and qualification (SSQ) are the less focused training dimensions. These dimensions can be improved if trainees participate in meetings with staff on training needs. Furthermore, there should be experienced and qualified staff employed with respect to theoretical and practical training. Training dimension management and organization (MAO) cannot be ignored when effectiveness of VET is considered. It can be enhanced if there is proper monitoring and implementation of development plans and there is effective local governing body and industrial representatives.

**Practical Implications:** The results of this research show that vocational training evaluation is helpful to improve the vocational education and training programs. This evaluation of VET is not only helpful for the top management of VET institutions but it is also helpful to the instructional staff to upgrade their VET programs by removing the deficiencies from the vocational training. This VET evaluation seems to be expensive at the initial stage but it has very healthy effects on the outcomes of VET programs. This VET evaluation will be helpful in capacity building of human resource. VET evaluation is the neglected area of research especially in Pakistan and proper attention is required to fill the gap between vocational training and its evaluation. This research has measured the effect of quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff trainee relationship, staff selection and qualification, physical resources, management and organization and interrelation with industry on the reaction and learning which were also found significant.

**Future Research:** This research has measured the effect of some vocational training dimensions: quality of contents, teaching method, assessment and examination, selection of trainees, counseling and career guidance, staff trainee relationship, staff selection and qualification, physical resources, management and organization and interrelation with industry on the reaction and learning. The researcher should explore further vocational education and training dimensions and further two levels of Kirkpatrick model, performance and results should also be investigated. As vocational training dimensions are helpful in the evaluation of VET programs, so further study is requires to explore the more dimensions of vocational education and training programs.

**REFERENCES**


