

Vocation Education Quality from Demand Side's Perspective: The Case of Transport Technology Universities in the North of Vietnam

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Abstract: Quality outcomes from vocational education and training (VET) are fundamental to ensuring a skilled workforce and supporting a productive economy. The quality of vocational training from the demand's perspective is defined as meeting the customer specification, needs or requirements. Using the method of Exploratory Factor Analysis (EFA) and Multiple Regression Analysis to get the analytical results of 275 respondents as graduates of University of Transport and Communication, University of Transport Technology (the two universities training on transportation in the North of Vietnam), the results show that factors are measured by the observed variables in the study that ensure reliability and relevance. The descriptive statistics result of vocational training quality is 3.28, while all independent variables are at average level (between 3.1 to 3.48) with the highest value related to the quality of the teacher and the lowest are facilities and training programs and management capacity of university. However, the regression results show that the qualification of the teacher, material facilities and training program, management capacity and job opportunities at the training school do not affect the quality of the training while "Learners-NH" have a great positive effect and the labor market information has a negative effect on the training quality of the school significantly. Base on those data, some policy recommendations have been given out in order to improve the training quality of transport technology universities in the north of Vietnam in particular and the vocational training quality of Vietnam in general.

Key words: vocational training's quality; demand side perspective; transport technology universities

JEL code: J

1. Introduction

Assuring the quality and relevance of vocational education and training (VET) has become a more important and challenging task as today's labor markets change faster than ever. If learning doesn't lead to satisfactory outcomes, everyone loses: learners, employers and society at large. This is what stirs up the field of quality assurance in VET. Harvey and Green (1993) explore the nature and usage of quality in relation to higher education and point out that quality is a relative concept. Harvey (2006) provides some definitions of quality such as: quality as perfection sees quality as a consistent or flawless outcome; Quality as fitness for purpose sees quality in terms of fulfilling a customer's requirements, needs or desires; Quality as value for money sees quality in terms of return

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on investment. Another perspective on the concept is offered by Cheng (2001), in which he proceeds to identify three paradigm shifts in quality improvement in education: (i) internal quality assurance, which “makes an effort to improve internal school performance, particularly the methods and processes of teaching and learning”; (ii) interface quality assurance, which emphasizes ‘organizational effectiveness, stakeholders’ satisfaction and market competitiveness and makes an effort to ensure satisfaction and accountability to the internal and external stakeholder; (iii) future quality assurance, which is defined “in terms of relevance to the new school functions in the new century as well as relevance to the new paradigm of education concerning contextualized multiple intelligences, globalization, localization and individualization”. Although quality assurance (QA) processes in VET and Higher Education are based on similar principles that can be seen from the supply side’s perspective (internal quality insurance or quality as value for money) or demand side’s perspective (quality as fitness for purpose, interface quality assurance). However, there are some differences to be noted. QA in VET is required to provide stronger evidence that product (competent graduate) fits for purpose (needs of the industry) (Marko Savic, 2016). Therefore, training providers are expected to ensure high level of readiness of their graduates for the employment.

Ministry of Education in Vietnam states the importance of quality human capital as the major pre-requisite for the sustainable development of the country. Thus, improving the quality of training is the first priority of universities in Vietnam. There are many researches on this field in the recent years such as Pham Vu Phi Ho and Nim Ngoc Yen (2017); Son Trinh Van et al. (2016), Nguyen Hoang Lan et al. (2015). However, most of them focus on the quality of university’s training from the perspective of employers and the case studies were not vocational training. In addition, in 2013, Government has approved the strategy for development of vocational training stage 2011-2020, in which nominated Ministry of Labor — Invalid and Social Affairs to submit for government approval of the project “Basically and comprehensive innovation of vocational training” towards 2020 in order to upgrade a skilled workforce to meet the demands for development of industries and contribute to the improvement of nation’s productivity and competitiveness, however, the recent Labor survey results show that when Transport graduates enter the job market, most of them are unaware of the employment reality. They are either shocked or unprepared to adapt to the working environment or find it difficult to cope with their job responsibilities. Thus, improving the quality of vocational training in transport sector is necessary. To date, there are 10 public universities or Public Institutions of Higher Education (PIHE) related to transportation belong to ministry of transport of Vietnam (MOE, 2014a & 2014b), nevertheless, there are no research on quality of vocational training in this field especially research on external assessment of training quality. This paper will conduct the evaluation of quality training in transport sector base on the assessment of graduated students of the two university of transportation in the North of Vietnam as University of Transport and Communication, University of Transport and Technology. The paper is structured into four sections. After this introduction, Section 2 describes the research methodology and data. Section 3 present the results of research. Finally, the Section 4 will be some discussion and conclusions.

2. Research Methodology and Data

2.1 Research Methodology

In this study, the quality of vocational training is based on definition in Harvey (2006) and Marko Savic (2016) whereas quality is defined as fitness for purpose of a product or service. From the demand’s perspective,

fitness for purpose defines quality as meeting the customer specification, needs or requirements. Thus, quality of vocational training can be measured as the satisfaction of the learner between the learning outcomes achieved against the original goal; Learning contents are appropriate to the reality; Ability to apply for a job.

After studying the models and overview of factors affecting to quality of vocational education training, the research uses 6 factors such as the learners (characteristics and attitudes); teacher qualification (Knowledge, experience, sympathy with the students of the lecturer); Facilities and training programs; Management capacity of university; Job opportunities at the university; and labor market information quality of service.

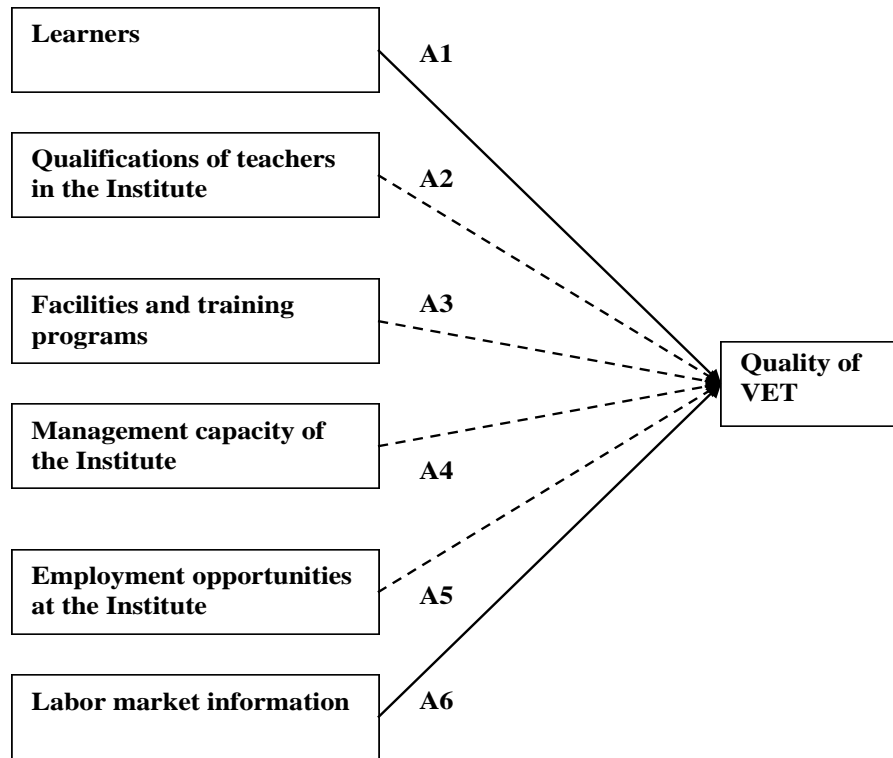


Figure 1 Relationship between the Research Variables

Base on the list of factors affecting to quality of vocational training, the survey was designed to collect student assessments of the quality and influencing factors. The main part of the questionnaire consisted of 33 observed variables, of which 30 observed variables were used to measure students' perceptions about the six influencing factors of training quality, the other three measure training quality. Specifically, table 1 presents the list of observed variables which are Likert scale survey questions (1. Do not like; 2. Dislike; 3. Normal; 4. Like; 5. Like so much).

The study uses the method of Exploratory Factor Analysis (EFA) and Multiple Regression Analysis, using SPSS 21 to get the analytical results.

2.2 Data

By using the EFA method, the sample of the study requires a minimum of 5 observations per variable (Hair.et.al, 1998), thus with the 33 observed variables, the survey needs to collect data of at least 165 respondents. The study has sent randomly 350 questioners to graduates of University of Transport and Communication, University of Transport Technology (the two universities training on transportation in the North of Vietnam) and finally the number of respondents were 275 (satisfies the sample's requirement).

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Table 1 List of Observed Variables

Code	Observed variables
<i>Learner</i>	
NH1	Your apply based on your ability and family conditions.
NH2	You always get support from your family.
NH3	You are trying to learn a career to find a job
NH4	Before the course, how much knowledge do you have?
NH5	You are always optimistic about your job opportunities.
<i>Teacher Qualification</i>	
GV1	Do teachers have a good knowledge of the relevant fields?
GV2	Are teachers experienced in practical matters?
GV3	Is the practical skill of the teacher well-versed?
GV4	Is the teacher's communicative ability easy to understand?
GV5	Is the classroom management skill of the teacher good?
GV6	How well is the coordination ability of teachers in management of class activities?
<i>Facilities and training programs</i>	
VC1	Are the presentation facilities (tables, microphones, projectors, equipment) meeting the requirements of the lecture?
VC2	Does the quality of modeling, simulation, and practical equipment meet the requirements of the lecture?
VC3	The quality of the materials (syllabus, lectures, reference materials) prepared for the course is sufficient?
VC4	Are there many situations, such as related facts, that are included in the lecture?
VC5	Is the training mix between theory and practice appropriate?
VC6	Do learning conditions (furniture, lighting etc.) meet the requirements of the learner
<i>Management capacity of the Institute</i>	
QL1	School-based policies that match learners
QL2	Management competence in all aspects of the field is good.
QL3	The School's culture (timetable, uniforms ...) are friendly, positive?
QL4	School security is always good.
QL5	The school has a policy of exempting tuition fees for outstanding students or special circumstances
<i>Job opportunities at the Institute</i>	
VL1	The Institute provides supportive policies for graduates.
VL2	Students who have achieved excellent academic results are kept in a school setting.
VL3	100% of students after graduation get jobs
VL4	The Institute has a close relationship with the business of students after graduation.
<i>Labor's market information</i>	
TT1	The Institute provides timely labor market information.
TT2	School trains depend on market needs
TT3	Learners can easily grasp the recruitment information.
TT4	Students feel satisfactory with information supported by school.
<i>Quality of VET</i>	
CL1	The satisfaction of the learner between the learning outcomes achieved against the original goal.
CL2	Learning contents are appropriate to the reality.
CL3	Ability to apply for a job.

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Table 2 The Characteristic of Respondents

Evaluation Criteria	Frequency	Percent, %
<i>Sex</i>		
Male	202	73.5
Female	73	26.5
<i>Age</i>		
From 18 to 25	256	93.1
From 26 to 35	10	3.6
From 36 to 45	6	2.2
Over 45	3	1.1
<i>Study</i>		
Road and Bridge Construction	93	33.8
Automotive Technology	91	33.1
Finance - Banking	57	20.7
Information Technology	34	12.4

Source: Base of data collection.

The data analysis process included: Descriptive statistics, Evaluate the reliability of the scale over Cronbach's Alpha; Exploratory factor analysis (EFA); Multiple regression analysis

Overall regression function:

$$Li = \beta_1 + \beta_2NH_i + \beta_3GVi + \beta_4VCi + \beta_5QLi + \beta_6VLi + \beta_6TTi \quad (1)$$

3. Results of Research

The descriptive analysis results of training quality show that the average grade point above average level is 3.28 still low, the standard deviation is relatively small 0.8 show that the level of training quality of the learners is quite similar. In the measured aspects, the learner rated the “Ability to apply for a job” (CL3) as highest aspect with average level 3.39 and the lowest in the “The satisfaction of the learner between the learning outcomes achieved against the original goal” (CL1) of 3.12. There are, however, no significant differences in the assessment scores from learners as seen in Table 3 below.

Table 3 Evaluation Results of VET Quality at Present

	N	Range	Minimum	Maximum	Mean	Std. Deviation
CL1	275	4	1	5	3.12	.688
CL2	275	4	1	5	3.31	.808
CL3	275	4	1	5	3.39	.915
General assessment	275	4	1	5	3.28	0.80

Source: Analysis results by SPSS software.

To the learner factor (removes NH5 due to lack of credibility needed through EFA analysis), the analysis showed that the average score was above the average of 3.45, the standard deviation was relatively small at 0.92. In aspects of the learner-factor survey, the highest rating was “3.93” aspects “You are trying to learn a career to find a job” (NH3), and lowest rating was “Before the course, how much knowledge do you have?” (NH4) with

2.98. This demonstrates the need for a career and understanding of the career still have a gap in the learner's perceptions.

For the teacher qualification, the results of the analysis showed that the average grade point of the 5-points Likert scale is 3.48, the standard deviation is quite small 0.89. This shows that the level of the learner's perception of the teacher's level is quite satisfactory. In terms of teacher evaluations, the highest rating "Are teachers experienced in practical matters" that was rated (GV2) at an average of 3.64 and lowest at "How well is the coordination ability of teachers in management of class activities" (GV6), 3.31.

For the factor of facilities and training programs, the analysis results show that the average rating score perceived is 3.10, the standard deviation is quite small 0.98. This indicates that the level of perceptions of the learners in terms of facilities and training programs is quite good. In aspects of facilities and training programs assessment, the highest rating is "The quality of the materials (syllabus, lectures, reference materials) prepared for the course is sufficient" (VC3) with average of 3.32 and the lowest in terms of "Do learning conditions (furniture, lighting etc.) meet the requirements of the learner" (VC6), 2.87.

For the factor of management capacity of university, the average rating score perceived on average in the 5-points Likert scale is 3.33, the standard deviation is quite small 0.95. This shows that the level of the learner's perception of the management competence of the school is quite good. In terms of the assessed aspect, the highest is in the aspect of "The school has a policy of exempting tuition fees for outstanding students or special circumstances" (QL5) average of 3.77 and the lowest is "University-based policies that match learners" (QL1) with 3.08.

The average rating score perceived on job opportunities factor is 3.29, the standard deviation is quite small 1.07. This indicates that the level of the learner's perception of the job opportunities at the training school is relatively good. In terms of the assessed aspect, the highest was "Students who have achieved excellent academic results are kept in a university setting" (VL2) with 3.56 and the lowest for "100% of students after graduation get a job" (VL3), 2.92.

The analysis results of labor market information show that the average rating score perceived is 3.18, standard deviation 1.02. This shows that the level of perceptions of learners in the labor market information is quite good. In terms of the assessed aspect, the highest was the "School trains depend on market need" (TT2) with average of 3.26 and the lowest for the "Students feel satisfactory with information supported by university" (TT4) is 3.09.

The analytical results show that the Cronbach Alpha coefficients of both 6 quality influencing factors and training quality are greater than 0.6. Thus, factors are measured by the observed variables in the study that ensure reliability and relevance. Specifically, (i) the Cronbach Alpha coefficient of learner factor is 0.638; (ii) the "teacher qualification" factor's Cronbach Alpha coefficient is 0.897; (iii) the Cronbach Alpha coefficient of "Facility and training programs" factor is 0.837; (iv) The "management capacity of the Institute" test result in Cronbach Alpha is 0.806; (v) the employment opportunities' Cronbach Alpha coefficient is 0.797 (vi) the Cronbach Alpha coefficient of "labor market information" factor is 0.872; and the "quality of the training's Cronbach Alpha coefficient is 0.612".

The results of the exploratory analysis for the variables of affecting factors (independent variables) after the removal of the variable s with a small factor loading factor of 0.5 (NH5) by orthogonal rotation showed that the KMO coefficient was greater than 0.5 (0.895), Bartlett's test with a p-value of 0.000 is less than 0.05, the explanatory variance is greater than 50% (66.551%), the factor loading factor of observation variables is greater

than 0.5, the observed variables converge to six factors such as theoretical model. This suggests that research data using factor analysis is appropriate. We use the same method for dependent variable (quality of vocational training) so the KMO coefficient is greater than 0.5 (0.638), Bartlett's test has p- value less than 0.05 (0.000), the factor loading factor is greater than 0.5, the observed variables converge on a single factor. This shows that using factor analysis is appropriate, the dependent variable "Quality of VET" is a one-way scale.

Use the least squares (OLS) to determine the regression coefficient β_i of the equation (1). The result is presented in Table 4.

Table 4 Results of Multivariate Regression Analysis

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.048	.135		.354	.723
	NH	1.086	.038	.908	28.479	.000
	GV	.010	.034	.010	.296	.767
	VC	-.033	.036	-.034	-.913	.362
	QL	.060	.037	.060	1.633	.104
	VL	.017	.031	.021	.551	.582
	TT	-.101	.034	-.124	-2.987	.003

Source: Authors' calculation.

According to Table 4, Sig. The coefficients β_2 , β_3 , β_4 are higher than the 5% significance level; so they are not statistically significant, meaning that the qualification of the teacher, material facilities and training program, management capacity and job opportunities at the training school do not affect the quality of the training. It is not that these factors are not influenced by this, but the learner's assessment of these conditions is to ensure that they have a good learning outcome. This can be explained by the support policy of the Ministry of Transport to improve the output quality in some universities, so the training universities in the transport sector today are quite equal in quality and quantity from training programs to facilities

4. Discussion and Conclusions

The regression results show that "Learners – NH" have a great positive effect on the training quality of the school. Learners are the key factor determining the quality of training. This is also very accurate, because human beings are always the core of all change. Beside that, the results also show that one of most disadvantage of current vocation training in general and in transportation training in particular in Vietnam is that training in schools is not close to the actual labor market demands, there is no link between training schools and businesses. These facts have been resulted from the vocational training curriculum, program have many contents that are formalistic, not updated, supplemented regularly to be appropriate with the requirements of the labor market. The quality and effectiveness of training of many vocational training institutes are still low and not in line with the human resources demands of each sector and each locality. The relationship between VET institutes and businesses is loose.

To improve the quality of transportation training, there are some policy recommendations have been suggested.

Firstly, is improvement of awareness of learner's role. Students need to negotiate with themselves in the

learning process to achieve the set forth target. Many studies of universities transport technology show that students have different needs, motivations, and expectations of a major, a subject, and in the course of learning they frequently adjust their study plan to be appropriate with the objectives of the course. Knowledge is always redefined when students discover more about it, and may be replaced by more appropriate new learning strategies in the future.

Second, developing the forecast of human resource and training demands following the sector structure, profession and qualification to be suitable to the requirements of socio-economic development in each period. To renovate the mechanism of receiving and processing information, building database in the field of vocational training. Strengthening the link between training and businesses, to improve regulations so that businesses are subject of vocational training, participating in all stages of training process. Apply technology to build a system linking supply and demand of training in the whole system.

Thirdly, enhance awareness of the role and morality of the teacher, so that the teachers need to know their qualification, capacity and then make efforts to improve their knowledge, update new knowledge, take the international standard training program as a measure to learn, develop and improve the quality of the lecture. Encouraging enterprises, productions, business and service establishments to participate in training and fostering of vocational skills for teachers in the form of receiving them to practice at enterprises for updating and improving practical skills, accessing to new technology, etc. Training, fostering and standardizing for formation of a team of managers who have professional working manner.

Finally, continue to innovate teaching and learning methods, taking students as the centre of the training process. Basically, renovate forms and methods of examination and test in universities education. To attach the role and responsibility of the businesses, from the determination of the requirements on exam questions related to jobs, self-control and self-responsibility to the knowledge and skills to be included in the examination and test.

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