



Sustainability of Sustainable TVET Lecturer Competencies

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ABSTRACT

Malaysia is committed to practicing conservation concepts in line with UNESCO's recommendations to ensure a sustainable future. Hence, the role and contribution of TVET institutions to sustainability are very proactive and practical to address environmental preservation issues as well as improving the economy, social and culture without affecting future generations. In this regard, this study was conducted to produce sustainable TVET lecturer's competence at Vocational College. In this study, the researchers have conducted a study using a real instrument TVET Program Sustainability Model based on competence in vocational college (KV) lecturer who has been certified the validity and reliability of the 351 respondents in 6 KV according to selected zones nationwide. Data from the questionnaire were analyzed using Winstep version V3.69.1.11 and SPSS version 20.0 with Rasch Analysis Model. Finally, this study clearly demonstrates a model that has been built and tested for its validity and reliability can determine the elements of sustainable lecturers' TVET competence for producing quality students.

Key words : competence, lecturer, TVET, vocational college.

1. INTRODUCTION

In facing the 21st century. The concept of sustainability is the most proactive and practical UN's brainchild and initiative to address the issue of balancing the demands of development and preservation of the environment as well as improving the economy, social and culture without affecting future generations [1]. This statement is also supported by [2] stating that the main goal of sustainability is emphasizing community development, especially graduates and educators with knowledge, skills, and values that support sustainable, viable, and better quality of life. Accordingly, the TVET program is key to sustainable development based on the [3] since education is considered the key to effective development strategies, Technical and Vocational Education and Training (TVET) must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help achieve sustainable development.

This statement is relevant to the study done by [4] which stated that TVET program is the key to sustainability. Therefore, educators at institutions of TVET providers should have the competence and sustainable practices in response to

growing concerns about the impact on the environment, economy, society, and culture.

1.1 Problem Statement

The concept of sustainability is a term that is elusive and too subjective. Hence, efforts towards achieving sustainability require changes in human attitude and behavior in personal life, community and at work. Unfortunately, success is somewhat lacking in making changes because the practice and competence of lecturer's at TVET institutions are somewhat ambiguous [5]. Based on literature review and early interviews, researchers found that there was confusion about a handful of lecturer's/instructors and policymakers at TVET institutions in particular at Vocational Colleges to interpret the sustainability goals.

1.2 Research Objective

The research objective are to determine the elements of sustainable TVET lecturers' competence for producing quality students and able to identify the existing competency level of lecturer kv and the difference in level of competency between existing and required.

2. THE AIM OF EMPHASIZING SUSTAINABILITY

All Changes in values and attitudes, skills and behaviors were achieved through widespread and in-depth understanding towards sustainable development issues and concerns. In efforts toward achieving sustainability, the transition period is a very critical one, as the transition to a new way of life demands a corresponding change in the way we view the world globally. Likewise, the necessary changes in the public's view of their relationship with other human beings and biosphere aspects must be made. It also demands strong commitment from all sectors of society as it will involve a revolution in institutions, systems, lifestyles and values [6].

2.1 Sustainability Models

Model of Prism Sustainability was developed [7], define SD with the help of four components; Economy, environment, society, and institutions. In this model of interdependence such as care, access, democracy, and eco-efficiency need to be closely interrelated as they show the relationship between dimensions that can translate and influence the policy. In every dimension of the prism, there is imperative (as the norm for action). The instructions used to measure how far someone actually has come in comparison to the overall SD vision. This is illustrated in figure 1 as below.

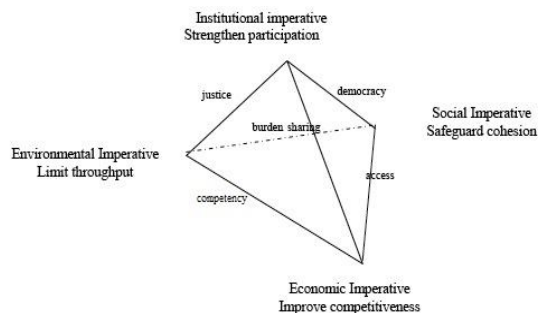


Figure 1: Model of Prism Sustainability [7]

2.2 Competencies of the Sustainable Vocational College (KV) Lecturers

The competency and competence of KV lecturers are one of the key elements that must exist in performing outstanding duties and responsibilities. If the instructor does not have a good competency in terms of knowledge, skills, attitudes, and professionalism will inhibit the country's goals. This is because educators are one of the foundations for the nation in terms of education. By having professional competence among educators, the quality of the country will be enhanced. The key that every educator has to offer is efficiency. Efficiency is a set of knowledge and teaching skills in carrying out its professional duties so that educational goals can be achieved well [8].

Competent means sufficient, competent and well-trained [9]. Therefore, competent educators can be defined as a well-trained, responsible and have an efficiency not only in the process of teaching and learning, even outside of the classroom itself. The task of an educator is not just teaching, but also includes other tasks such as managing student activities, organizing organizations, managing committees and working with others in implementing educational agendas. Therefore, educators need to have skills not only in teaching skills, but also in managing, managing, communicating effectively, solving problems, and having high ethical values [10]. All of these elements are lead to the formation of educator attributes in the competence of lecturers at Vocational College.

3. METHODOLOGY

This study uses a combination of quantitative and qualitative methods (mix method - Exploratory Sequential Design). This method is used because a large number of respondents are involved. It is comprising lecturers of Vocational College throughout Malaysia. This study also uses random sampling techniques of cluster group types where the data is collected from all respondents based on a specific zone.

The method of analyzing the research data is a combination of RIT (windsteps) and CTT (SPSS) of the study data analysis. The questionnaire was distributed to 351 people. The population involved in this study is the Lecturer in 6 selected Vocational Colleges, which are Vocational Secondary Schools from all over Malaysia which have been upgraded

from 2012. Among the selected KV are KV Kluang, KV Shah Alam, KV Balik Pulau, KV Temerloh, KV Kuching and KV Tawau.

4. RESEARCH FINDINGS

Based on myths and literary passages, researchers have listed frequent factors and are widely stated by previous researchers as the factors of competency and sustainable practice of lecturer's at Vocational College. For the competence factor the elements listed are i) vocational knowledge, ii) functional skills, iii) values and iv) professionalism. While the sustainable practice factor includes; i) the environment; ii) economy; iii) social and iv) culture. Here is an analysis that has been done to get the element of the competence element of the lecturer.

4.1 Analysis of Competency Element Phase

The analysis of competency level is shown in Table 1. This finding demonstrates that the overall competency element for the required level is much higher than the existing KV lecturer level where the entire element is available at a moderate level while the required level is high.

Table 1: Analysis for Competency Level

Competencies Element	Existing	Required
	Level	Level
Vocational Knowledge	Medium	High
Functional Skills	Medium	High
Values	Medium	High
Professionalism	Medium	High

4.1.1. Analysis of the Vocational Knowledge Element

Tables The level analysis of the Vocational Knowledge element is shown in Table 2. The findings of existing KV lecturers on the element of Vocational Knowledge are modest, sub-elements; Assessment, Pedagogy, Articulation, Course Expert, and Entrepreneurship. While the analysis for the level required by the KV lecturer on the element of Vocational Knowledge is high.

Table 2: Analysis of the Vocational Knowledge Element Level

Sub-Element Vocational Knowledge	Existing	Required
	Level	Level
Course experts	Medium	High
Pedagogy	Medium	High
Entrepreneurship	Medium	High
Assessment	Medium	High
Articulation	Medium	High

Table 3 shows the analysis of documents obtained through the exploration of research findings in journals, seminars paperwork and the publication of scientific books, there are elements of Competence identified and agreed upon by participants or experts' panel involved in this study, namely Vocational Knowledge.

Table 3: Element and Sub Element for Vocational Knowledge Competency

Element (Construct)	Sub-Element (Dimension)
Vocational Knowledge	Course Expert
	i. Expertise in the course of KV-based Curriculum
	ii. Subject Matter Expert
	iii. Designing Vocational Training oriented teaching Pedagogy
	i. Improve the effectiveness of teaching techniques
	ii. Diversifying the teaching approach
	iii. Able to translate the National Education Philosophy (FPN)
	Entrepreneurship
	i. Applying the element of entrepreneurship across curriculum
	ii. Combining the entrepreneurial knowledge with courses of study
	iii. Implementing KBAT in entrepreneurial elements
	iv. Expert in conducting self-reflection assessment
	Assessment
	i. Record the progress of the student semester progress
	ii. Measuring student performance for teaching improvement
	Articulation
i. Adjust the course in parallel with industry needs	
ii. Developing areas according to the needs of local communities	
iii. Ensure the course is parallel to the majors in IPTA	
iv. Using the latest technology	

4.1.2. Functional Skill Element Analysis

The level analysis of Functional Skill elements is shown in Table 4. The analysis of the existing KV level of lecturers on Functional Skill elements is moderate, namely Counseling, Communication, Workshop Management, and Technology. While the analysis of the level required by the KV lecturer on the Functional Skill element is high.

Table 4: Analysis of the Functional Skills Element Level

Functional Skill Sub-Elements	Existing Level	Required Level
	Technology	Medium
Communication	Medium	High
Counselling	Medium	High
Workshop Management	Medium	High

Table 5: Element and Sub Element for Functional Skills Competency

Element (Construct)	Sub-Element (Dimension)
Functional Skills	Technology
	i. Develop virtual L&T (e-learning)
	ii. Recording RPH with ICT application
	iii. Applying the latest technology in teaching of communication through various media
	Communication
	i. Mastering multiple languages besides native language
	ii. Ability to speak in public
	iii. Communicate professionally

Counseling	i. Empathizing student's problems
	ii. Providing counseling services
	iii. Providing career guidance
	iv. Motivate students
	Workshop Management
	i. Expert in maintenance of machines and tools
	ii. Ensuring the safety of lab and workshop
	iii. Systematically recording the equipment's inventory

Table 5 shows the analysis of documents obtained through the exploration of research results in journals, seminar papers and the publication of scientific books, there is a Competency element identified and agreed upon by the participants or experts panel involved in this study namely the Functional Skills.

4.1.3. Analysis of Value Element Level

The level analysis of the value element is shown in Table 6. The analysis of the existing level of KV lecturer on the Value element is moderate and high; the Accountability sub-element has an elevated level of existing, while the modest existing level of Integrity, Honesty & Trust, and Action sub-elements. While for the analysis of the level required by the KV lecturer on the overall Value element is high.

Table 6: Analysis of Value Element Level

Sub-Element Values	Existing Level	Required Level
	Actions	Medium
Accountability	High	High
Honest & Trustworthy	Medium	High
Integrity	Medium	High

Table 7 shows the analysis of documents obtained through the exploration of research findings in journals, seminar papers and the publication of scientific books. There are elements of Competence identified and agreed upon by the participants or experts panel involved in this study namely Values.

Table 7: Element and Sub Element for Value Competency

Element (Construct)	Sub-Element (Dimension)
Values	Actions
	i. Acting efficiently
	ii. Fast decision making
	iii. Time-efficient in every task
	Accountability
	i. Responsibility towards students
	ii. Ensuring the mission & vision of organization is achieved
	iii. Complying with the command of superior
	Honest & Trustworthy
	i. Perform tasks without supervision
	ii. Adopting high-ethical culture
	iii. Using the power given to honesty
	Integrity
	i. Giving commitment and responsibility
	ii. Complying the secret act in workplace
iii. Helping colleague without prejudice	

4.1.4. Analysis of Professionalism Element Level

The level analysis of Professionalism elements is shown in Table 8. The results of the analysis of existing KV lecturers to the overall Professionalism element are modest, whereas for the analysis of levels required by KV lecturers towards the overall Professionalism element is high.

Table 8: Analysis of Professionalism Element Level

Sub-Element Professionalism	EXISTING	REQUIRED
	Level	Level
Creative & Innovative	Medium	High
Strategic Planning	Medium	High
Change Agent	Medium	High
Research	Medium	High

Table 9 shows the analysis of documents obtained through the exploration of research findings in journals, seminar papers and the publication of scientific books. There is a Competency element identified and agreed upon by participants or experts panel involved in this study of Professionalism.

Table 9: Element and Sub Element for Professional Competency

Element (Construct)	Sub-Element (Dimension)
Professionalism	Creative & Innovative
	i. Customize creative teaching techniques
	ii. Adapt the creativity style effectively
	iii. They create interesting ABM
	iv. Developing the latest ideas
	Strategic Planning
	i. Ensuring the aim of organization is achieved
	ii. Planning the student training development
	iii. Developing a strategic action plan
	iv. Ensuring KPM Accreditation (MQA) is achieved
	Change Agent
	i. Ensuring the marketability graduate
	ii. Developing industrial-concept training
	iii. Inspiring colleague
	Research
	i. Solving current issue with action plan
ii. Developing educational research project	
iii. Applying the research in enhancing teaching and learning process	

Based on the statistical analysis results of the Wilcoxon T-test statistic and boxplot diagram using the SPSS software version 20.0 clearly shows that there is a significant difference to the existing level and the required level of respondent's competence element. Referring to the statistical analysis results of the Wilcoxon T-test shows that there are Significant differences to existing levels and levels required for the competence of KV lecturers. The results of the analysis clearly show that required level tests are much higher than the existing level tests for competence elements.

The qualitative findings obtained through interviews with experts, in the majority, they agree on the elements of competence presented to them based on document analysis. At the expert's point of view, the competencies required for KV lecturers are such as knowledge, skills, values, attitudes, and professionalism.

5. CONCLUSION

Today's employers in the public and industry sectors are primarily focused on human capital that has been trained with sustainability values as well as knowledge and skills in the course of work. This goal will not be achieved if lecturers/instructors at TVET institutions are incompetent and weak in applying the concept of sustainability concepts to students. Accordingly, TVET lecturers/instructors in particular at Vocational College should not only have the technical and vocational knowledge and skills but also must adopt the concept of sustainability in their teaching and learning. The findings also have resulted in the elements of sustainability of TVET lecturers. Finally, through this study, it is clear that the elements that have been built and tested are valid and credible for use by various parties in the institutions of TVET providers at schools, colleges, and universities, particularly Vocational College.

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