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Improvement of TVET's Educators Competency in Heutagogy Context

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Abstract: Heutagogy, otherwise referred to as self-determined learning, is a teaching technique focused on students that emphasize the growth of autonomy, ability, and capacity. The objective of this article is to determine the improvement efforts of TVET educators towards the encountered teaching challenging in the 21st century. A quantitative approach was applied in this research in which. The questionnaire was distributed to TVET educators from 14 selected TVET Institutions. The collected data was organized and analyzed using frequency distribution. This article presents the relationship between the heutagogy element with the level of competency toward improving knowledge, skill, and attitude among TVET educators. According to the study's findings, most educators have obtained a high level of improvement in knowledge, skills, and attitude competency elements. The Pearson correlation analysis is conducted to determine the relationship of heutagogy element and competency level using $p < 0.01$ as the significance references. The findings show that there is a strong relationship of heutagogy elements (i.e. self-learning, creativity, self-efficacy, flexible curriculum, learning resources, and flexible assessment). This is explaining that TVET educators have aware and make significant action to increase productivity and efficiency. This finding can be a benchmark for continuous process improvements that can help eliminate inefficiencies and ultimately improve education quality.

Keywords: Heutagogy, TVET educator, self-determined learning

1. Introduction

Effective and quality education allows people to participate actively in the development of a better nation. In achieving the very important goal of quality education, the teacher has been described as a major resource. This is against the context that teachers are considered to be in a stronger position to affect learner success. In this case, teachers or educators need to keep motivated and prepared themselves to influence students' performance positively. Many recent studies have discussed the potential issues and challenges faced by educators to cope with revolutionary of an educational situation (i.e. technology, online-learning, big data, industrial revolution and unexpected pandemics) that change most of the pedagogy, andragogy and heutagogy approaches (Flanigan & Kiewra, 2018; Kebritchi, Lipschuetz, & Santiague, 2017; Shernoff, Sinha, Bressler, & Ginsburg, 2017). One of the challenges is in fostering creativity in the classroom (Soh, 2017). Social modelling, reinforcement, and classroom ecology are three approaches to foster students' imagination.

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Besides, as technology proliferation continues to intensify in the classroom/learning session, it brings potential issues among the educators. For example, the different of the technology used in the classroom (i.e. high tech and low tech) (Nicol et al., 2018), student behaviour – in which create more distraction that resulted in less attention giving to the learning process (Ben Harper, 2018; Flanigan & Kiewra, 2018), and micro-generation differs - a different generation of students (i.e. baby boomer, generation –z, generation alpha) which have the other way to perceive technology and teaching approaches) (Engelbrecht, Llinares, & Borba, 2020).

In line with the educational challenges and issues, educators play an important part to prepare themselves to avoid and reduce the academic risks (e.g. lack of teamwork, empathy, and support). Adequate self-determined learning is helpful in inspiring educators to continue improving. Educators can obtain opportunities by learning from each other while expanding the perspectives from which they develop their professional for TVET education (Chacko, 2018). Self-determined learning, also described as heutagogy efforts for developing skills and expertise, are also connected to the educator's self-awareness and empowerment strategies (Moore, 2020). The self-determined learning approach helps leaner become more autonomous to decide what and how they learn and how they are assessed. Self-determined learning is useful in engage educator for re-skilling and up-skilling their knowledge discovery. Self-determined learning is pro-active approach because adults tend to be more self-motivated as they have a solid goal in mind when they begin to study

Based on the challenge, as mentioned earlier and potential issue mentioned, this is explaining that current pedagogies approach should have proper planning. It has become an additional obligation of TVET educators to promote effective teaching and learning sessions in various ways. Therefore, teachers ought to be mindful of potential forms of encouraging student capabilities. In this case, educators need to improve themselves first to perform well in teaching and learning.

2. Literature Review

Heutagogy has broad educational implications on several fields, mostly explained in the context of adult education. In the context of improvement efforts and competencies strategies (i.e obtain more knowledge, highly skilled and attitude) among technical and vocational education training (TVET), heutagogy can benefit educators as it is the more open approach and acceptable for adult learning. By adopting heutagogy approach, educators become more motivated to explore their subject of interest. Initially, the idea of heutagogy approach arises due to a growing dissatisfaction with traditional and conservative approaches to education prevalent in the high-er education field and the need to recognize learning as an extremely dynamic experience occurring in complex non-linear and ever-changing teaching and learning environment. Besides, also mentioned conventional educational approaches are face difficulties in preparing learners to be competitive in new workplace settings (Prashanti, KS, Komattil, & Ismail, 2017). The linear method to the current education system is not compatible with the workplace environment's complex and nonlinear existence. Heutagogy is commonly useful to the learner that not keeping pace with the dynamism of the current educational experiences.

Learning methods and ongoing assessment of learners can and should be structured to take their level of experience and capacity into account. Heutagogy, as mentioned above, was intended as a natural extension to pedagogy and andragogy (Jones, Penaluna, & Penaluna, 2019). When the learner has achieved this degree of maturity, the instructor needs to recognize, be willing to relinquish influence, and then negotiate new learning and evaluation methods based on the direction in which the learner is moving. Besides, learners need to develop abilities and skills in self-determined learning by adopting the heutagogy approach. Competency can also have referred to as the core abilities required for fulfilling one's role as educators. The educators' capability exhibits traits such as self-efficacy, teamwork – collaboration – communication skills, creativity, and positive values (i.e. good attitude).

This article explores the relationship of improvement effort and competencies in the workplace through the conceptual lens of heutagogy. The term heutagogy is also referred to as self-determined learning, an educational approach that emphasizes learners' self-determination (Blaschke, 2012). This means that learning occurs when the learner is ready, rather than when the teacher expects or intends to do so. Learning usually takes place due to some outside experience—the setting of education (i.e. the class-room or the online-learning). Heutagogy is not time-bound, which gives the learner more versatility and encourages them to interact in their learning more. A key advantage of this flexibility is how different learning interests can be facilitated within the same teaching and learning session (Moore, 2020).

Heutagogy indicates that learning takes place at two main levels. Still, more than are likely to occur, and as our understanding of learning is more established, these levels' complexity will be exposed (Moore, 2020; Naqvi & Parvez, 2019). The first of these includes the learning of knowledge and abilities, or what is generally referred to as 'competencies'. The second stage, what might be considered 'deeper learning,' contains the above-described com-plex neuronal interactions. Here, the whole learning process becomes much less predictable, and the learner's needs and encouragement change easily and not always in accordance with the teacher's or the curriculum's objectives.

3. Methodology

In educational activity studies, the primary data collection tool is used to test hypotheses, represent student's attitudes, assess student's satisfaction levels, perform segmentation research and a range of other purposes. The researcher conducts a cross-sectional survey to obtain insights from a target group. The most powerful and basic justification for conducting improvement efforts using a survey is that answers to unique, critical questions can be obtained. Besides,

three main advantages are considered while conducting this survey. For example, respondents can remain anonymous, considerably cheaper than most other methods for collecting primary data and ability to produce large quantities of data.

3.1 Data Analysis

For analysis, descriptive statistics involving mean, standard deviation, minimum value and the maximum value was conducted to identify the level of competency (i.e the knowledge, skills and attitudes) of the TVET educators. Mean value is a guide used by researchers to interpret the level of competence of this TVET educators. In this study, the frequency distribution is conducted, as suggested by (Jones et al., 2019). Firstly, calculate the data range using Equation (1) by finding the minimum and maximum values of the data. For determining the class interval or class distance, the range is used.

$$h = \frac{Observed\ Range\ (Score)}{Number\ of\ Classes} \qquad Eq\ (1)$$

Next, decide the distance, denoted by h and obtained by Equation (2) of the groups (assuming that the class intervals for all groups are the same)

$$= \frac{Maximum\ Score - Minimum\ Score}{Number\ of\ Classes} \qquad Eq(2)$$

3.2 Hypothesis Testing

Statistical hypothesis testing is referred to as confirmatory data analysis. It's a way to draw inferences from the data (Mourougan & Sethuraman, 2017). Hypothesis testing is used as this study aimed to identify the correlation between group to an idealized position which is efforts and competency level based on heutagogy context. The first step in any hypotheses test is to identify the research hypothesis. In these steps, the hypothesis is a development based on this research question - Is there a significant relationship between heutagogical elements and teaching competencies in improving skills?The second step is defining the null hypothesis, which is the statement that will be disproved. For example, there is no relationship between heutagogy elements measured with the competency among the TVET educators. The next step in hypothesis testing is developing a measured summary for each heutagogy element using mean and standard deviation. The further details of this step have reported in a previous publication.For step four, a standard distribution such as the normal distribution or t-distribution is the most common source of reference distributions to choose a reference distribution (McKenzie, 2004). In this study, we used F-ratio as test statistics. The final part of the test finding is significant by determining whether to accept or reject the null hypothesis. In this step, the level of significance, $p < 0.01$ is determined. And the final step is to draw conclusion. There are two conditions to draw the conclusion which described as follows.

P-value $\leq$ 0.01: The correlation is statistically significant; If the p-value is less than or equal to the degree of significance, the correlation may be inferred to be different from 0.

P-value > 0.01: The correlation is not statistically significant; If the p-value is greater than the degree of significance, then the correlation cannot be inferred to be different from 0.

H_0 = There is no significant relationship between heutagogy elements with the level of competency in improving skills among TVET educators.

H_1 = There is significance relationship between heutagogy elements with the level of competency in improving skills among TVET educators.

4. Result

In this study, a survey questionnaire was designed by adopting heutagogical approaches that promote lifelong and independent adult and self-learning (i.e. self-learning, creative, self-efficacy, learning resources, flexible assessment and curriculum) TVET educators. Figure 1 presents the distribution of the questionnaire for 13 different Vocational College around Johor, Malaysia. A total of 141 TVET educators participate in this study. nature and translations. Authors are responsible for obtaining from the copyright holder, the permission to reproduce any figures for which copyright exists.

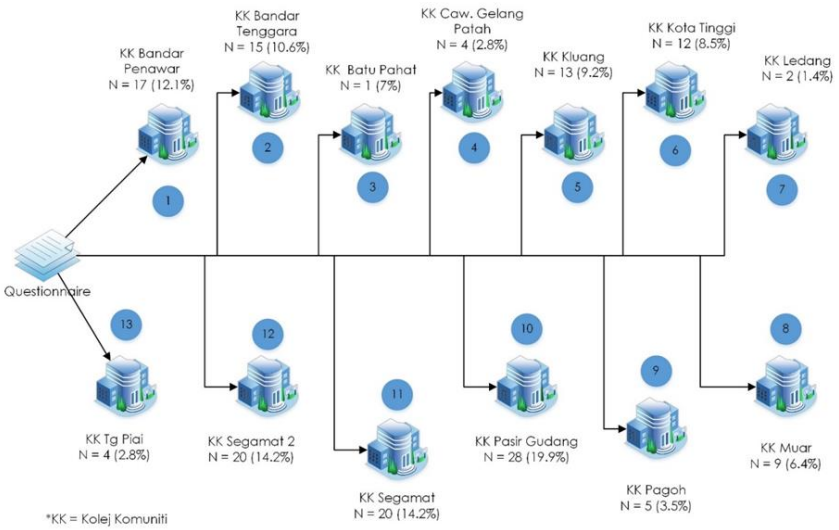

Fig. 1 - Allocation of survey questionnaire

4.1 Competency Level

Based on the Eq (1) and Eq (2), Table 1 presents the competency level for TVET Educators in Vocational College. There are three levels of elements determined. In overall, TVET educators in Vocational College is obtained high level of knowledge ($\bar{x}$ = 29.27, σ = 3.90), high level of skills ($\bar{x}$ = 33.45, σ = 4.63) and high level of attitude ($\bar{x}$ = 25.40, σ = 3.46), respectively. The high level of competency for these three elements indicates that TVET educators have prepared themselves to face the ever-changing and challenging teaching situation nowadays. This explains from the aspect of attitude that TVET educators have an awareness of the need in performing tasks in the field of teaching and learning to be effective and professional instructors in the implementation of Technical and Vocational education curriculum.

Table 1 - Level of competence for TVET educators

Variable	Mean value	Improvement Level	Frequency (*f*)	%	$\bar{X}$	Σ
Knowledge	7-16	Low	-	-	29.27	3.90
	17-26	Moderate	30	21.3		
	27-35	High	111	78.7		
Skills	8-18	Low	-	-		
	19-29	Moderate	19	13.5	33.45	4.63
	30-40	High	122	86.5		
Attitude	6-13	Low	-	-		
	14-21	Moderate	13	9.2	25.40	3.46
	22-30	High	128	90.8		

In the context of attitude, findings show that the TVET educator has an awareness of the need in performing practical tasks in teaching and learning. According to Mohamat (2016), the positive attitude shown in the study is expected to handle the teaching and learning process as demanded by educational innovation which is one of the key variables that determine the success of invention. Besides, TVET educators need to further improve their skills in all aspects such as teaching, leadership, program planning through various activities, and understanding student behaviour by following relevant courses and training. This finding is in line with stated that overall teachers need to have high skills in giving guidance to students where the teaching staff needs to be more prepared and play an important role in the success of teaching and learning, especially hands-on(Abu Bakar & Mohd Husnan, 2010).

4.2 Hypothesis Result

The linear relationship's intensity and direction between two continuous variables can be investigated using the Pearson correlation coefficient. The coefficient of correlation can range from −1 to +1 in value. The higher the coefficient's absolute value, the greater the relationship between the variables. A total value of 1 for the Pearson correlation implies a perfect linear relationship. No linear relationship between the variables is indicated by a correlation near 0. To further determine correlation coefficient is significant, the p-value is compared to significance level to assess if the relationship between variables is a significance level, $\alpha < 0.01$ is used, and an α of 0.05 means assuming that there is a relationship among variables. Table 1 presents the Pearson Correlation test results. Table 2 shows that there is a

strong positive relationship between heutagogical elements and teaching competence. Thus, researchers can conclude that there is a significant relationship between heutagogical elements, namely the context of individual learning, creative, self-efficacy, flexible curriculum, learning resources and flexible assessment with teaching competencies in improving TVET education skills among TVET educators.

Table 2 - Findings for relationship between heutagogical elements and teaching competency

No	Hypothesis	Findings
1	There is no significance relationship between self-learning with competency levels among TVET educators	r = 0.717 p < 0.01
2	There is no significance relationship between creative efforts with competency levels among TVET educators	r = 0.748 p < 0.01
3	There is no significance relationship between self-efficacy efforts with competency levels among TVET educators	r = 0.781 p < 0.01
4	There is no significance relationship between self-flexible curriculum efforts with competency levels among TVET educators	r = 0.832 p < 0.01
5	There is no significance relationship between learning resources efforts with competency levels among TVET educators	r = 0.782 p < 0.01
6	There is no significant relationship between flexible assessment efforts with competency levels among TVET educators	r = 0.792 p < 0.01

5. Conclusion

The jury is out on what the future holds, considering the rapid pace of technological change in terms of how educators act and interact. What educators can be sure of is that for those engaged in education and training, this future will be thrilling and equally rapidly evolving. When students are knowledgeable, they show the learning of information and abilities; skills can be replicated and knowledge can be retrieved. Thus, at all levels, educators should explore ways to incorporate heutagogical approaches into their current curriculum in ways that can encourage and improve lifelong learning abilities. Educators need to be prepared to constantly question existing dogmas, and to find new ways to analyze and improve current practices to keep pace. One effort to do this was heutagogy.

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