Efforts to Improve Knowledge and Skills by Adopting Heutagogical Approaches among Technical and Vocational' Educators

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Abstract: Educators play the most crucial role in the education system. They are the cornerstone on which the stability and growth of the education system, including technical and vocational education. In the current situation, the teaching-learning process shall be decided based on the requirements of the learner at every level. With fast-changing technology and education norm, educators faced many challenges and took various way in upgrading and reskilling themselves towards providing practical teaching session. Therefore, heutagogical approaches are appropriate for improving skill and knowledge among them. This study is aimed to determine the efforts level of educator in 13 different Vocational colleges in Johor. A total of 141 educators participated in the survey questionnaire that measures their efforts toward six heutagogical elements in teaching and learning. The finding shows that majority of the educators shows the high level of efforts toward improving their skills and knowledge. The educator's perception on the implementation of heutagogy in teaching and learning process benefit tremendously in designing practical and sustainable professional development course for educators. Also contributes to heutagogy model in technical and vocational education settings.

Keywords: Heutagogy, knowledge and skill improvement, self-development strategy

1. Introduction

Education is not simply about cultivating student expertise in exchange programmes; awarding teachers with scholarships and grants, but it is equally necessary to sustain a progressive learning environment. Effective educators in modern society should be able to gain information from various sources, train and self-educate during their service to be competitive and productive. Teaching effectiveness and quality of delivery are important criteria to ensure students are able to gain information from the session are one of the educators' goals. Besides, the development of professionalism of teachers or educators in Technical and Vocational Education (TVET) is a culture of lifelong learning to ensure the maintenance of the quality of education is guaranteed. The transformation of Technical and Vocational education requires educators to upskilling and re-skilling their knowledge and skills to be more dynamic by given the ever-changing demand and need of the vocational curriculum, especially in Community Colleges in Technical and Vocational Education.

Moreover, efforts to improve skills and knowledge is also related to the self-awareness and empowerment strategies among the educators. Individual empowerment provides a pool of potential community. Abel and Hand (2018) stated empowerment has long been promoted as a significant element in closing emerging power disparities, reducing powerlessness, and stimulating the success of individuals and teams. In this case, most of the educators have encouraged to re-skilling and updating their knowledge time by time as TVET is unique in nature in dealing with technology, new machine, tool and material. Yet, this rapid advancement of technology, the way of teaching and

learning process gradually will change and skills that we thought could stand the test of time could quickly become obsolete (Vinayan, Harikirishanan, & Ling, 2020).

On the other hand, adult learning is challenging. There are many factors and considerations require to ensure teaching and learning is success such as low technology tolerance, time-management, life and working commitment, financial issue, motivation, etc. Apart from that, there of TVET empowerment strategies, up-skilling, and reskilling studies through heutagogy approaches mentioned in the literature shows that the importance of improving teaching and learning strategies among educators. However, there are a lack of clarification studies that drive the specifics efforts and strategies that emphasized life-long learning and independent adult learning considering the educators' capabilities, facilities, organisation and resources. Therefore, the paper is aimed to determine efforts taken by Vocational College's educators to improve their skills. Also, at the same time fulfil the primary aim of TVET to provide trainees entering the work market right after completing skills training courses with job skills.

2. Literature Review

2.1 Efforts and Strategies to Improve knowledge and Skills

Today's societies need highly trained teachers/educators who can make education vibrant and compelling; teachers who have professional dedication and selfless devotion (Mohamad, Saud, & Ahmad, 2009). TVET educators must prepare themselves with skills training and development, attend industrial attachment, gain a technical or industrial qualification, trainer training (TOT) skills and skills, and share knowledge and skills with others. This supported by several studies in TVET areas which emphasized the need for upskilling and reskilling among the TVET educators. For example, Rosmawati, Razak, and Mahzan (2016) have focused on factors that contribute to individual professionalism that facilitate the advancement of the profession, such as professional growth, social interaction inside and outside polytechnic institutions and the physical environment. To increase efficiency, many technologies are implemented and practised in the new classroom, which reflects a change from a teacher centre to a learner-centred learning process. According to McAuliffe et al., (2009), students are also always encouraged by the educator to know they're more about specific knowledge and obtain experience from trusted and independent thinkers. Nowadays, most of the educational methods introduced in vocational colleges are aimed at improving more abilities and less potential, which is the ability to use skills in new contexts (Ibrahim et al., 2020; Devier, 2019).

TVET teachers/instructors who are highly qualified and skilful are demanding to emphasize the production of high-quality TVET graduates. Educators' competencies alone are not adequate to succeed in today's workplace when the technical profession subsumes diverse contexts; it is in this scenario that technical educators are tasked with the daunting role of educating "capable learners." In the literature, some strategies and ways have been discussed in improving knowledge and skills among teachers such as self-directed learning in the workplace, formal programs organized by the organization and organizational development strategies. This strategy is vital to improve college's role-based understanding, skills and attitudes, promoting vocational college reform and at the same time improving student achievement (Li et al., 2018). Phuong, Cole, and Zarestky (2018) found that formal services, such as serial workshops and development, have been recorded at a high frequency compared to self-directed learning and organizational development activities. For example, attending courses and workshops related to their expertise or seeking advice and guidance from a colleague about how to develop their teaching skills. Besides, Hashim, Judi, and Wook, (2017) mentioned the information sharing between highly trained instructors and other instructors can improve the quality of training and skills development in the TVET institutions.

2.2 Learning in Heutagogical Approach

The main core concept of heutagogy is referred to term "self". This concept is derived from the study of self-directed learning that focused on adult learning, which commonly preferred technique to be used on various platforms, especially in the higher education field (Moore, 2020). Heutagogy is a continuum of pedagogy, andragogy and heutagogy (PAH). In the context of PAH, students' progress from pedagogy to andragogy, and ultimately to heutagogy (Glassner & Back, 2020). Proponents of the PAH continuum argue that higher levels of student maturity and self-organization are needed to develop the continuum (Blaschke & Hase, 2016). This is because students are less dependent on instructors for guidance and structure in the learning process (pedagogy), they can progress through the continuum for more autonomy and a less structured learning environment. In the first stage 1 (pedagogy), educators master the learning process vigorously to try to motivate students to engage in learning content, for example, by defining specific teaching goals and learning objectives and activities along a structured, linear path. At the next level (andragogy), the instructor begins to cultivate the student's ability to direct his or her own learning, allowing him or her more freedom in directing how learning takes place and providing less structure in course design. However, the instructor is still a key agent in the learning process, continuing scaffolding and building learning experiences, while allowing a higher level of student autonomy. At the heutagogical level (level 3), the student takes full control of their learning and given full choice in determining how he will learn. With pedagogy and andragogy, the focus of teaching is primarily on content dissemination and learning, which occurs in a linear manner (i.e., with learning outcomes set by the instructor). As a student-centred theory, heutagogy places emphasis on students determining their learning

pathways and helping students understand how they learn. Table 1 presented the heutagogy design would adopt in adult learning. In sum, heutagogy focused on learning and shifts educators closer in the direction of better understanding the needs of advanced learners in dynamic and diverse work environments.

Table 1 - Heutagogy Element (Blaschke & Hase, 2016)

Huetagogy Design	Element
Explore	Students must be given the freedom and opportunity to explore various sources of knowledge about their journey. They need to be able to develop and test hypotheses and ask and answer questions — all that arise during the exploration process.
Create	Using a variety of learning approaches, for example, writing, planning, and drawing.
Share	By sharing information, students can learn from their own discoveries and experiences, as well as identify others with similar interests, which can lead to potential opportunities for future collaboration.
Connect	Make easy connections with social media, which gives students the opportunity to network with other people around the world
Reflect	Reflection provides an opportunity to rise to higher levels of cognitive activity such as analysis and synthesis
Collaboration	Working together toward common goals, students can solve problems and strengthen their knowledge of sharing information and experiences, continuing to practice, and experimenting by trial and error

3. Methodology

3.1 Research Design

This study was utilizing the survey research design to collect quantitative data that best served to answer research questions and the purpose of the study.

3.2 Sampling

A total of 141 data was collected from 13 different Vocational College in Johor. A total of 19.9% (n =28) from Kolej Komuniti Pasir Gudang, Kolej Komuniti Segamat 14.2% (n = 20), , 12.1% (n =17) from Kolej Komuniti Bandar Penawar, 10.6% (n =15) from Kolej Komuniti Bandar Tenggara, 9.2% (n =13) from Kolej Komuniti Kluang, 8.5% (n =12) from Kolej Kota Tinggi , Kolej Komuniti Segamat 2 7.8% (n=11), 6.4% (n =9) from Kolej Komuniti Muar, 3.5% (n=5) from Kolej Komuniti Pagoh, 2.8% (n =4) from Kolej Komuniti Cawangan Gelang Patah and Tanjung Piai, 1.4% (n=2) from Kolej Komuniti Ledang and 0.7% (1) from Kolej Komuniti Batu Pahat.

3.3 Research Instrument

Questionnaires were chosen for this study because they are a reliable and quick method to collect information from multiple respondents in an efficient and timely manner. Firstly, a pilot analysis was conducted to determine the reliability and validation of the proposed questionnaire. The reliability of the test was 0.970, and the Cronbach alpha coefficient was 0.978. Results suggest that questionnaire is adequately measured and will allow for determining the efforts to improve knowledge and skills among the educators. There are 31 items of questionnaire questions related to the efforts to improve skills and knowledge among TVET educators was developed. The questionnaire was designed by adopting heutagogical approaches that promote lifelong and independent adult learning among (i.e. self-learning, creative, self-efficacy, learning resources, flexible assessment, and curriculum).

3.4 Data Analysis

The results of the survey were analysed to determine the efforts level as perceived by the educators regarding the six elements of heutagogy approach. Descriptive statistics were generated including the mean score and standard deviation for every item in the questionnaire. Figure 1 presented an overview of the research methodology.
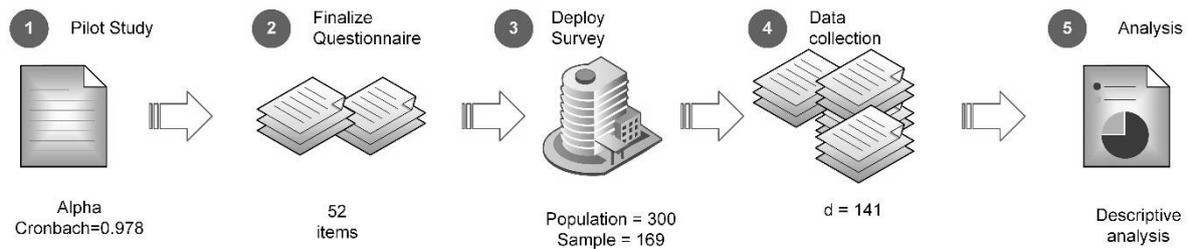
Fig. 1 - Overview of methodology

4. Results and Discussion

This section presented the results of the ways and efforts level to improve skill and knowledge among educators during their services. Heutagogy based continuous professional development acts as an alternative approach to cater for the need of self-determined learning among educators (Paul & Kumar, 2020). There are six major elements in heutagogy that were discussed, namely self-learning, creative, self-efficacy, learning resources, flexible assessment, and curriculum. Table 2 presented the self-learning process which educators' give efforts to learn by themselves. Self-learning is a new method of learning. Not that it replaced conventional, educational learning, but complemented it with some excellent results (Hawley & Hostetler, 2017). Self-directed learning has been shown to be effective, convenient, and fast with the widespread of technology use among teachers and also students (Lemmetty & Collin, 2020; Rashid & Asghar, 2016). Thus, this study was found that high efforts among the technical and vocational educators (in average mean = 4.36 and standard deviation (SD) = 0.696). Most of the educators were engage in skills-based program during services (mean = 4.45, SD= 4.45).

Table 2 - Results of self-learning efforts

No	Item	Mean	SD	Efforts
KPI1	Obtain preliminary information on course content will improve the skills to be attended	4.24	0.726	High
KPI2	Looking for opportunities to attend skills improvement courses in practical teaching	4.42	0.699	High
KPI3	Engage in academic programs	4.33	0.627	High
KPI4	Engage in skills-based programs while teaching	4.45	0.712	High
KPI5	Engage in disciplinary programs during work	4.35	0.748	High
KPI6	Obtain current issues regarding Technical and Vocational at home and abroad	4.35	0.665	High
	Average (Total)	**4.36**	**0.696**	High

A positive classroom atmosphere stimulates students to engage actively and heighten their confidence to interacts with others (Ibrahim, Aswati & Melissa, 2020). Creating the atmosphere requires the educator to add creative elements that make the lessons more exciting, interactive, and effective. The right combination of creativity and curricula allows students to be creative and inspires them to learn new things. (Table 3 presented the high creative efforts among Vocational College's educators to ensure the teaching process more effective (mean = 4.30, SD = 0.686). The educator combines various media, build more creative teaching materials, make the Technical and Vocational syllabus more creative to attract students and can cultivate a positive attitude to produce creative students. In this case, it shows that the educator needs to be creative first to enhance the student's creative thinking. This is supported by Yang et al. (2016), which mentioned creative teaching strategies such as facilitating associative thinking, sharing impressive ideas, encouraging evidence-based conclusions, and reviewing and commenting on group presentations are able to develop creative thinking.

Table 3 - Result of creative efforts

No	Item	Mean	SD	Efforts
K1	Combine various media in the teaching and learning process	4.13	0.830	High
K2	Ensure that the teaching materials obtained can be modified for more creative teaching delivery	4.20	0.699	High

Table 4 - Continue

No	Item	Mean	SD	Efforts
K3	Integrate and build a solid teaching in a more effective teaching and learning process	4.34	0.631	High
K4	Plan learning activities that are able to cultivate a positive attitude to produce creative students	4.38	0.693	High
K5	Ensure the Technical and Vocational syllabus more creative to attract students	4.43	0.577	High
	Average (Total)	**4.30**	**0.686**	High

Furthermore, Table 4 presented a high level of self -effort efforts among educators. The high self-efficacy level mainly related to the ways and strategies taken by an educator to manage their workload in significant ways. For example, the majority of agreed that colleges structure and organizational environment play a role in shaping the teaching effectiveness (mean = 4.43, SD = 0.636), and most of the educators have high teaching efficacy towards students. Choi, Lee, and Kim (2019) suggested that project-based learning has a positive impact on teacher self-efficiency and the influence of project-based learning on teacher self-efficiency can be mediated by positive responses from students. Besides, Smetackovaa (2017) found a negative association between self-efficacy and burn-out syndrome, where the correlation between burnout and self-efficacy was significant and different rates of burnout among teachers with high self-efficacy and low self-efficacy. Furthermore, self-efficiency was a significant factor in teaching thought activities by teachers. In addition, teaching style was also a meaningful predictor. Facilitating the model was more meaningful than the representative, expert, authority and personal models (Dilekli & Tezci, 2016).

Table 5 - Result of self – efficacy efforts level

No	Item	Mean	SD	Efforts
EK1	Has high teaching efficacy towards students	4.34	0.583	High
EK2	Facing failure with more persistent efforts to master teaching skills to succeed	4.16	0.628	High
EK3	Focus on overcoming obstacles when faced with difficult teaching assignments	4.29	0.722	High
EK4	The structure of the college and the organizational environment play a role in shaping the teaching effectiveness	4.43	0.636	High
EK5	Provide opportunities for students to increase their self-efficacy	4.11	0.744	High
	Average (Total)	**4.27**	**0.663**	High

The adaptability and usability of the curriculum to students' needs and capabilities is a concept related to curriculum flexibility. While flexible approach to teach and learn ensures that today's students will know when, where and how they want it. The benefits include increased learning outcomes from evidence-based and technology-enabled teaching approaches. Table 5 presented the result of a flexible curriculum efforts level among the educators. As shown in Table 5, this study was found the flexible curriculum at the high state level of the educators' efforts (mean = 4.20, SD = 0.78). Majority of educators are required to provide at least fundamental technical and vocational knowledge in every teaching session (mean = 4.29, SD = 0.713). In literature, one of the efforts taken by educators to realise curriculum flexibility was by using a blended curriculum with face-to-face and online components. The various contextual, teacher-related and student-related factors were viewed as having an effect on (further) curriculum versatility (Jonker, März, & Voogt, 2020).

Table 6 - Flexible curriculum

No	Item	Mean	SD	Efforts
KF1	Given the free choice to follow a flexible curriculum in teaching and learning sessions	4.13	0.695	High
KF2	Flexible curriculums help to boost educator's motivation	4.18	0.740	High
KF3	Educators need to knowledgeable in every content (curriculum or syllabus) to ensure effective teaching and learning process.	4.17	0.736	High
KF4	Understand the role of educators to educate students with various knowledge and skills	4.25	0.656	High
KF5	Educators are tied to provide students with basic of technical and vocational knowledge	4.29	0.713	High
	Average (Total)	**4.20**	**0.708**	High

Table 6 presented the efforts taken in terms of learning resources. With the rapid development of technology, teaching and learning strategies need to be concurrent with the common technology used among students and educators (Song & Bonk, 2016). Moreover, students nowadays are considered digital natives who tend to be more attentive and enthusiastic to learn through technology application in the teaching and learning process (Pirani & Hussain, 2019). In this study, most of the educators used a variety of resources, platforms in order to ensure effective teaching and learning (mean = 3.74, SD = 0.695). For example, educators were using the Internet to find the teaching materials and resources, as e-learning contribute higher mean, (mean = 4.50), followed by YouTube (mean = 4.34, SD = 4.34), Online module (mean = 4.26), and journal (mean = 3.62)

Table 7 - Learning resources

No	Item	Mean	SD	Efforts
SP1	Apply information technology (ICT) during teaching & learning through the SLE Program (Smart Learning Environment) that aims to encourage of using ICT	4.29	0.722	High
SP2	Using internet facilities with the application as below during the teaching & learning			High
	i) E-learning	4.50	0.605	High
	ii) YouTube	4.34	0.705	High
	iii) Online module	4.26	0.691	High
	iv) Journal	3.62	0.876	High
SP3	Plan activities to cultivate students to do their own	4.32	0.625	High
SP4	Require students to explore for themselves the material that can be used as a resource and make choices in performing their assignments	4.13	0.758	High
SP5	Encourage students to collaborate, share knowledge, opinions and views with other friends	4.28	0.613	High
	Average (Total)	**3.74**	**0.695**	High

Subsequent heutagogy element is flexible assessment. Flexible assessment is an assessment which involves option on the part of the student. This study found that the majority of the educators put high efforts on assessing students mean = 4.17, SD – 0.683. The assessment process is mainly one part of the teaching activities which do not contribute to the heavy workload among the educators.

Table 8 - Flexible assessment

No	Item	Mean	SD	Efforts
PF1	Plan a flexible assessment makes it fun for students to learn	4.27	0.559	High
PF2	Flexible assessment increases my motivation as an educator	4.29	0.645	High
PF3	The activity of building an assessment test item did not burden me	4.06	0.725	High
PF4	The activity of scoring an assessment test did not burden me	4.15	0.696	High
PF5	The activity of recording assessment data did not burden me	4.09	0.792	High
	Average (Total)	**4.17**	**0.683**	High

5. Conclusion

Educators should conduct rigorous self-study research about their own teaching and learning. The finding of the study will be a reference to determine the long-term sustainable practice toward life-long learning among educators. The heutagogy approaches and elements mentioned can be a guideline to achieve the aspiration of the TVET agenda. These efforts show the educators were highly aware of the importance of upgrading their skills and knowledge. Besides, they are efforts towards improving teaching and learning. This study shows that most of the educators take better ways and strategies to improve themselves, be more creative (not only during teaching), upgrading the learning resources, make the flexible assessment and curriculum. As for academics and researchers alike, this study will prompt new ideas and knowledge the way technical and vocational can be improved, by improving educator's knowledge. Most importantly, this study benefits tremendously to the educator in finding the most effective efforts of improving their skills and knowledge through heutagogical approaches.

Acknowledgement

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