



Life and Career Skills among Technical and Vocational Education and Training (TVET) Students in Vocational Colleges

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Abstract: This research aims to investigate whether life and career skills are being embedded by the education institutions especially in the technical and vocational education since it provides a semi-skilled and skilled workforce to compete in the global labor market. A quantitative approach using a cross-sectional survey design was employed to determine the information of life and career skills from respondents. An instrument consist of 80 items, was developed by the researcher by adapting and adopting questions related to life and career skills. The total sample in this study is 275 Technical and Vocational Education and Training (TVET) students in Vocational Colleges, were selected using random sampling. The data were analyzed using descriptive and inferential statistics using a t-test. This result in this research shows that the Flexibility and Adaptability skills at the highest level possessed by the students in vocational colleges in Johor. The finding this study also showed that there was a significant difference between male and female students in vocational colleges on Flexibility and Adaptability skills, Social and Cross-cultural skills, Productivity and Accountability skills, and Responsibility and Leadership skills. However, there was no significant difference between students' gender on Initiative and Self-direction skills. This study helps to widen the scope of TVET education by promoting the student's skills that are prepared to face their career and life after graduating from their studies at vocational college. Finally, by profiling the 21st-century life and career skills of vocational college students in Malaysia, it is hoped that this study will help to give insight to decision-makers in Malaysian Higher Education to minimize the issues of the workforce faced by employers and strengthen TVET programs.

Keywords: Life and career skills, TVET, employees, 21st-century skills.

1. Introduction

Unemployment is one of the problems faced by many countries. The International Labour Organization reported that there was about 6.67% unemployment rate in the United States, 5.24% in Germany, 7.3% in the United Kingdom, and 5.72% in Australia. Meanwhile in Malaysia, the unemployment rate was about 3.22%. This report was based on the unemployment rate in 2014 (International Labour Organization, 2014). According to the Department of Statistics Malaysia, the unemployment rate in Malaysia has increased by 17.1 percent, which is 610.5 thousand as compared to 521.3 thousand in the same month in 2019. The unemployment rate in March 2020 increased to 3.9 percent (The Office of Chief Statistician Malaysia, 2020). The report shows that labour force as people aged between 15 to 64 years, and

either employed or unemployed. During the survey conducted, the unemployment rate increased (The Office of Chief Statistician Malaysia, 2020).

These unemployment issues may due to important factors such as the readiness of the graduates to enter the working environment and lack of skills to face the challenges in the working life (Janet, Kimberly, & Ken, 2010). The global economic recession also affected the unemployment rate (Wu, 2011). This issue cannot be ignored because graduates are the human workforce and the core innovative and productive towards making Malaysia as a country with a high-income economy (Hanapi & Nordin, 2014; Ismail et al., 2019). Graduates are having a tough time getting a job or to be employed. The employers are very choosy and they want graduates that are ready to work (Lowden et al., 2011). Ready to work or work readiness is referred to as possession of skills, knowledge, attitudes, and commercial understanding that will enable new graduates to make productive contributions to organizational objectives (Archer et al., 2008). As for the scenario in Malaysia with its vision to become a developed country by the year 2020, Malaysia has practiced an open economy that stressed foreign direct investment and export growth. Due to the open economy, getting a job is more challenging for the graduates. Many employers claimed that graduates are lacking of skills for work. Graduates now are lacking technical knowledge and generic skills that are importantly needed by employers to encounter the challenges in business (Azmi, Hashim & Yusoff, 2018). Examples of generic skills are creative thinking skills, teamwork skills, oral communication skills, decision making (Awang, 2010), ability to manage workloads, and knowledge of current issues (Ibrahim, Mohamed & Moubark, 2009).

Some of the major problems that are reported in the National Graduate Employability Blueprint 2012-2017 (Ministry of Higher Education Malaysia, 2012) are skills that do not match, unable to solve the problem, and lack of skill knowledge. This shows that educational institutions need to seriously recognize the problem in enhancing the skills of their students (Triki, 2010). To be precise, academic qualification is not the only criterion in recruiting new employees considered by the employer. This unsolved problem needs special attention from the educational institution. Thus educational institutions need to recognize the problem and equip their students with more than just high academic performance but also skills to prepare and survive for work.

21st-century skills are defined as the set of skills students need to succeed in learning, work, and life in this century which comprise a variety of skills including learning and innovation skills, digital literacy skills, and life and career skills (Trilling & Fadel, 2009). It is a 'must-have' skills as it emphasizes what students can do with knowledge rather than units of knowledge they have (Silva, 2008). Living in the 21st-century urge people to possess 21st-century skills especially higher education students that ideally think that they will be employed after graduation. If so, students should take the chance to enhance and learn the skills needed to be employed. Life and career skills comprised the skills that students need to possess to expand the opportunities for them to gain employment. Life and career skills comprise of what most employers call as employability skills but in a broader perspective.

In some countries, the percentage of females enrolled in Technical and Vocational Education and Training (TVET) is lower than male due to several factors such as government, school societal and parental (Shirley, 2014, Irwan Mahazir et al., 2019). Furthermore, a report by Sandhu and Ahmed (2018) stresses the importance of women in TVET sectors. This study also will compare the life and career skills between male and female students since several kinds of literature focus on gender bias in TVET just because TVET itself comprises of major technical and hands-on practices. Hence, this study is important to investigate the life and career skills among TVET students for different gender. The objectives of this study are:

- To examine the level of life and career skills possessed by the students in vocational colleges.
- To identify the differences in life and career skills between male and female students in vocational colleges.

2. Methodology

A quantitative approach using a cross-sectional survey design was employed to determine the information of life and career skills from respondents. The nature of this research design is the researcher needs to collect the data once from the sample at a specific time point. This research design usually being used by researchers due to its advantage in providing a current overview of the variables that become the focus of the study (Lim, 2007). Hence, this research design guides the researcher to collect the data systematically using a questionnaire as the instrument, towards a specific population in which the respondents for this study are vocational college students on a specific purpose of determining the life and career skills of the students.

This research will be focusing on the life and career skills among Technical and Vocational Education and Training (TVET) students in vocational colleges. This study involves TVET students who enrolled in Vocational Colleges (VC) in Johor, Malaysia. Currently, there are a total of 11 established vocational colleges in Johor, Malaysia. Vocational colleges in Johor, include Batu Pahat VC, Segamat VC, Kota Tinggi VC, Muar VC, Tanjung Puteri VC,

Kluang VC, ERT Azizah VC, Perdagangan VC, Tanjung Piai, Pasir Gudang VC, and Tun Hussein Onn VC. The total sample in this study is 275 TVET students in Vocational Colleges, were selected using random sampling.

An instrument consist of 80 items, was developed by the researcher by adapting and adopting questions related to life and career skills. The literature study shows that the elements that comprise in 21st-century life and career skills for TVET are Flexibility and Adaptability skills, Initiative and Self-direction skills, Social and Cross-cultural skills, Productivity, and Accountability skills, and Leadership and Responsibility skills. Items in the questionnaire were adapt, adopt, and will be modified from several sources closely related to these items in the manner of 21st-century skills, employability skills, and TVET basic skills that should be possessed by graduates to be the 21st-century workforce to suit the objectives of this study. The questionnaire was divided into three main sections and five sub-sections under elements of 21st-century life and career skills for TVET students. The sections are as follows:

- Part A: Demographic data
- Part B: Elements of 21st-century life and career skills for TVET students includes Flexibility and Adaptability skills, Initiative and Self-direction skills, Social and Cross-cultural skills, Productivity and Accountability skills, and Leadership and Responsibility skills.

Respondent shall indicate the level of agreement or disagreement with the statements in each element. The scale used was a six-point Likert scale style format from Strongly Disagree, Disagree, Less Agree, Agree, Strongly Agree, to Very Strongly Agree. The Alpha-Cronbach score value was used to assess reliability. Based on a pilot study was conducted by the researcher, the Cronbach's Alpha value of the instrument as shown in Table 1.

Table 1 – The reliability of the instrument

Elements	Total items	Cronbach's Alpha value
Flexibility and Adaptability Skills	17	0.888
Initiative and Self-direction Skills	17	0.774
Social and Cross-cultural Skills	17	0.863
Productivity and Accountability Skills	15	0.821
Leadership and Responsibility Skills	14	0.706

The value for Cronbach's Alpha for Flexibility and Adaptability, Initiative and Self-direction, Social and Cross-cultural skills, Productivity and Accountability, and Leadership and Responsibility element is more than 0.7. The result indicated 80 items to be considered as a reliable questionnaire. The actual study data were analyzed using IBM SPSS version 21. The data were analyzed using descriptive and inferential statistics using a t-test for gender comparison.

3. Results and Discussion

The total sample in this study is 275 Technical and Vocational Education and Training (TVET) students in Vocational Colleges in Johor, were selected using random sampling. The total respondents involved in this study were 163 (59.3%) male students and 112 (40.7%) female students.

3.1 The level of life and career skills possessed by the students in vocational colleges

This study focus on life and career skills which comprises five main variables namely (1) Flexibility and Adaptability skills, (2) Initiative and Self-direction skills (3) Social and Cross-cultural skills, (4) Productivity and Accountability skills and (5) Responsibility and Leadership skills. Each of the components of life and career skills in the framework has its features and actions.

Table 2 - Life and career skills possessed by the students in vocational colleges

Elements	Mean	SD
Flexibility and Adaptability Skills	4.42	0.55
Initiative and Self-direction Skills	4.19	0.53
Social and Cross-cultural Skills	4.16	0.54
Productivity and Accountability Skills	4.40	0.59
Leadership and Responsibility Skills	4.17	0.57

The study shows a mean, and standard deviations according to the students in vocational colleges. Based on Table 2, the finding of this study show that the Social and Cross-cultural skills at the lowest level with mean values 4.16 and standard deviations 0.54. Social and Cross-cultural skills consist of two important features that are a) interact

effectively with others and b) work effectively in diverse teams. Two actions that indicate interact effectively with others are i) know when it is appropriate to listen and when to speak, and ii) conduct themselves in a respectable, professional manner. As work effectively in diverse teams, actions that show the features are i) respect cultural differences and work effectively with people from a range of social and cultural backgrounds, ii) respond openly to different ideas and values, and iii) leverage social and cultural differences to create new ideas and increase both innovation and quality of work (The Partnership for 21st Century Skills, 2009). Trilling and Fadel (2009) stressing that social and cultural skills are the skills that every student needs to possess since the world of work does not limit the location of places in the 21st-century era. Technology can make many countries or region to collaborate and make things happen.

This result shows that the Flexibility and Adaptability skills at the highest level, with a mean score of 4.42 and standard deviations 0.55. Flexibility and Adaptability skills consist of two important features that are a) Adapt to Change and b) Being Flexible. The respondents in this study are students who are still studying in vocational college full time. This finding may be due to the objective of implementing the transformation of technical secondary school (SMT) into a vocational college in 2012, which wants the vocational college graduates prepared for the world of work. The implementation of the Vocational College curriculum based on job-based learning orientation has been implemented to ensure that vocational college graduates have high marketability. Adapt to Change features can be shown by two actions such; i) adapt to varied roles, job responsibilities, schedules and context, and ii) work effectively in a climate of ambiguity and changing priorities. Three actions show the feature of Being Flexible in the first component of 'Flexibility and Adaptability' are i) incorporate feedback effectively, ii) deal positively with praise, setbacks and criticism, and iii) understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments (The Partnership for 21st Century Skills, 2009). A study from Singh and Singh (2008) mentioned that employers are searching for employees that are more flexible, adaptable since they want to transform their companies into being more flexible and adaptable in response to changing the market's needs. Findings from Quek's study (2005) found that flexibility as very important in contributing to success in the workplace. The study also recognizes the significant relationship of graduate employees' successful work performance was related to attribute associated with flexibility skills. This was also supported by Wang (2012), who reported that flexibility in flexibility is the key in the labour market which is needed by both employers and workers to compete in the global economy.

3.2 Comparison between life and career skills between male and female students in vocational colleges

Table 3 - The flexibility and adaptability Skills between male and female students

Elements	N	Mean	SD	<i>t-test for Equality of Means</i>			
				<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>
Male Students	163	4.4126	0.57642	3.127	273	0.01	0.1019
Female Students	112	4.3107	0.57261				

Independent-samples t-test shows that there was a statistically significant difference in Flexibility and Adaptability skills scores for males ($M = 4.4126$, $SD = 0.57642$) and female students ($M = 4.3107$, $SD = 0.57261$; $t = 3.127$, $p = 0.001$, two-tailed). Thus, H_0 was successfully rejected. The finding of this study found that there is a significant difference between students' gender on Flexibility and Adaptability skills.

Table 4 - The initiative and self-direction skills between male and female students

Elements	N	Mean	SD	<i>t-test for Equality of Means</i>			
				<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>
Male Students	163	4.1861	0.47480	1.817	273	0.069	0.0338
Female Students	112	4.1523	0.51357				

Independent-samples t-test shows that there was a statistically significant difference in Initiative and Self-direction skills scores for males ($M = 4.1861$, $SD = 0.47480$) and female students ($M = 4.1523$, $SD = 0.51357$; $t = 1.817$, $p = 0.069$, two-tailed). Thus, H_0 is not rejected. The finding of this study found that there is no significant difference between students' gender on Initiative and Self-direction skills.

Table 5 - The social and cross-cultural skills between male and female students

Elements	N	Mean	SD	<i>t-test for Equality of Means</i>			
				<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>
Male Students	163	4.1617	0.55462	2.551	273	0.012	0.1122
Female Students	112	4.0495	0.56748				

Independent-samples t-test shows that there was a statistically significant difference in Social and Cross-cultural skills scores for males ($M = 4.1617$, $SD = 0.55462$) and female students ($M = 4.0495$, $SD = 0.56748$; $t = 2.551$, $p = 0.012$, two-tailed). Thus, H_0 rejected. The finding of this study found that there is a significant difference between students' gender on Social and Cross-cultural skills.

Table 6 - The productivity and accountability skills between male and female students

Elements	N	Mean	SD	<i>t-test for Equality of Means</i>			
				<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>
Male Students	163	4.4254	0.58548	3.207	273	0.001	0.1127
Female Students	112	4.3127	0.59581				

Independent-samples t-test shows that there was a statistically significant difference in Productivity and Accountability skills scores for males ($M = 4.4254$, $SD = 0.58548$) and female students ($M = 4.3127$, $SD = 0.59581$; $t = 3.207$, $p = 0.001$, two-tailed). Thus, H_0 rejected. The finding of this study found that there is a significant difference between students' gender on Productivity and Accountability skills.

Table 7 - The leadership and responsibility skills between male and female students

Elements	N	Mean	SD	<i>t-test for Equality of Means</i>			
				<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>
Male Students	163	4.2137	0.58642	3.139	273	0.002	1.1417
Female Students	112	4.0720	0.58261				

Independent-samples t-test shows that there was a statistically significant difference in Leadership and Responsibility skills scores for males ($M = 4.2137$, $SD = 0.58642$) and female students ($M = 4.0720$, $SD = 0.58261$; $t = 3.139$, $p = 0.002$, two-tailed). Thus, H_0 was successfully rejected. The finding of this study found that there is a significant difference between students' gender on Leadership and Responsibility skills.

The finding from the analysis showed that there was a statistical difference between male and female students in vocational colleges on Flexibility and Adaptability skills, Social and Cross-cultural skills, Productivity and Accountability skills, and Responsibility and Leadership skills. However, there was no significant difference between students' gender on Initiative and Self-direction skills. The mean score of male students was higher compared to female students in all five elements of life and career skills.

Findings suggested that male and female students are the same in terms of Initiative and Self-direction skills. This may due to the importance of having Initiative and Self-direction skills to demonstrate their ability to set reasonable short term and long term goals with specific criteria along with the strategies to meet the goals in particular dealing with time and managing workloads effectively. Initiative and Self-direction skills are important to start or begin to learn new ideas, concepts, processes, and applications involving efficiency and effectiveness to complete tasks as a commitment to a lifelong learning process. Therefore, these skills should be in both female and male students to complete tasks without direct observation by others to be highly self-reliant.

4. Conclusions

This study focuses on Career and Life Skills in the formulation. Besides, the new learning paradigm is in line with the life and career skills in the framework for 21st-century skills by the Partnership for 21st-century skills (P21). The main elements for the Life and Career Skills according to P21 and The New Learning Paradigm are (a) Flexibility and Adaptability Skills, (b) Initiative and Self-direction skills, (c) Social and Cross-cultural skills, (d) Productivity and Accountability skills, and (e) Responsibility and Leadership skills. This study adds up to the body of knowledge of the 21st-century skills and extending the pedagogical learning paradigm by explaining the new paradigm of learning in the 21st century. The combination of the framework for 21st-century skills by the Partnership of 21st-century skills and The New Learning Paradigm contributes to the exploration of how to teach students to be well prepared for the real world of work.

This study can be used to promote and assist in the relationship of Higher Education specifically vocational colleges and industries to improve and enhance TVET programs. Students as the client should be provided with serious training and skills to survive in the real working environment. They need to prepare thoroughly physically and mentally by embedding the Life and Career skills into their curricular in every program offered in vocational colleges. Therefore, to produce 21st-century workforce, educational institutions must thoroughly understand the 21st-century skills elements especially the life and career skills and nurture this skill to produce the workforce of employers' demand. This study helps to widen the scope of TVET education by promoting the student's skills that are prepared to face their career and life after graduating from their studies at vocational college. Finally, by profiling the 21st-century life and career skills of vocational college students in Malaysia, it is hoped that this study will help to give insight to decision-makers in Malaysian Higher Education to minimize the issues of the workforce faced by employers and strengthen TVET programs.

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