

**JTET**<http://penerbit.uthm.edu.my/ojs/index.php/jtet>

ISSN 2229-8932 e-ISSN 2600-7932

Journal of Technical  
Education and  
Training

# Comparing Employability Skills of Technical and Vocational Education Students of Thailand and Malaysia: A Case Study of International Industrial Work-Integrated Learning

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**Abstract:** This study focused on a comparison of technical and vocational education (TVE) students' employability skills in Thailand, a newly industrialized country and ranked 61st out of 148 countries worldwide on the quality of graduates' skillsets, and Malaysia, a top-ranked country in the group of upper-middle income countries in terms of graduates' skillsets (6th). Thirty mentors were asked to assess 90 Thai and 83 Malaysian students who completed international work-integrated learning (WIL) programs in 2015, 2016, 2017 and 2018, using a questionnaire that addressed 16 main aspects of measuring employability skills. The findings indicated that most of the Malaysian students had better employability skills than Thai students and there were no significant differences in employability skills between male and female students in both countries. The regression model of quality of work indicated that 'ability to learn and apply knowledge', 'judgment and decision making', 'discipline and adaptability to a formal organization', 'ethics and morality' and 'quantity of work' had a positive effect on 'quality of work'. This study suggested that, in order to effectively prepare students for professional work and careers in ever-changing workplaces, TVE institutions should carefully assess the quality of the WIL environment, especially international WIL. The reflection of mentors in the workplace provided useful information for TVE institutions to develop effective WIL program to boost students' qualities and may give insight into how students are likely to receive sustainable employment development to building a more sustainable society through the skills and knowledge of their students.

**Keywords:** International work-integrated learning, comparative study, sustainable employment

## 1. Introduction

The promotion of student quality and employability is the crucial role of educational institutions in sustainable development. This is related not only to student employment, but also to the possibility to obtain a good quality of life (Magnano, Santisi, Zammitti, Zarbo, & Di Nuovo, 2019). Despite the decade of educational concepts for sustainable development, the educational response is slower than the requirements of the labour market and sustainable economic development (UNESCO, 2013a). One of the major challenges of technical and vocational education (TVE) in sustainability and sustainable development is shaping students to effectively meet the demands of the global industrial market (Aktas, Pitts, Richards, & Silova, 2017). The job market in several countries has demonstrated a dearth of qualified TVE graduates to join the industry (SHRM, 2016). Particularly, in Southeast Asia, almost all countries have attempted to reorganise the TVE system to improve student quality and employability, promote sustainable development and address socioeconomic inequalities (Campbell, 2016). However, the scarcity of skilled, competent

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employees and the problem of a skills mismatch between employers' need and the employability of TVE graduates continues to be some of the biggest policy concerns in this region. This is because students are not well trained to enter the competitive workplace in an ever-changing global society (Agrawal, 2013). Most likely, this is a result of curriculum and pedagogy that do not match workforce skills needs, which leads to a lack of technical and vocational skills in students (Panth, 2013) and a decline in productivity growth due to a lack of economically valued skills (Ra, Chin, & Liu, 2015).

As with other countries in Southeast Asia and many developing countries across the world, Thailand has been trying to develop a TVE system since 1898 (OVEC, 2018b) and making a concerted effort to develop close cooperation with the industrial clusters for improving and producing qualified TVE students by offering various models of experiential learning (Ratchusanti, 2009), among which Work-Integrated Learning (WIL) is one of the forms of experiential learning. Despite a long history of TVE reforms in Thailand for sustainable development, the nation is unable to prepare students to match the demands of modern industrialised society (NESDB, 2016). As the National Economic and Social Development Board (NESDB, 2016) reported, the country has had many critical issues targeted for improvement, especially the low quality of education (NESDB, 2016) and insufficient curriculum related to workplace needs (Cleesuntorn, 2013). The persistent labour market mismatches, as well as insufficient skills, suggest that TVE institutions need to adjust their educational process and provide adequate skills training by working closely with the industrial sector to develop individual students with additional skills valuable for their future careers (Kamina, Ahmada, & Cartledge, 2013).

International WIL is an experiential learning process that immerses students in real-world projects and authentic international teamwork environments, which can develop intercultural competence and cultivate international thinking among students (Xiaochi, 2012). International WIL is recognised as an important component of world-class skilled TVE students' development (Malerich, 2009) and play a crucial function in creating a sustainable society through work skill development. Western Digital Corporation (Thailand) (WD), the international hard disk drive manufacturing industry, has been aware of the importance of international WIL for Thai students since 2008, and wants them to improve their skills while working with international students. In addition, Malaysia's Polytechnic Education Department, Education Ministry, needed to send Malaysian students to get international WIL experience at WD in Thailand. Therefore, since 2015, the Thai-Malaysia International Vocational Exposure Program (Thai-Malaysia IVEP) of WD has incorporated students of both countries. The objectives of IVEP are to improve individual learning, enhance soft and hard skills and build up a relationship between educational institutions, students and the company. In particular, this programme requires Thai students to learn and develop work skills from Malaysian students. While working for Thai-Malaysia IVEP, all students are also encouraged to provide first-hand work experiences to people of different cultures, supporting them in having better work skills and intercultural competencies, as well as foreign language skills (WD, 2018).

The assessment and reflection of mentors in the workplace can be an effective method to help boost students' qualities and influence future career decision-making processes (UNESCO, 2013b). It is necessary for mentors at WD to assess the employability skills of Thai and Malaysian students, helping students improve their skills and know their strengths and weaknesses in terms of employability. The purposes of this study, therefore, were: (a) to compare the level of employability skills between Thai and Malaysian TVE students according to mentors' assessments after completion of the Thai-Malaysia IVEP, (b) to determine whether there is a significant difference between the means of employability skills of male and female students in each country and (c) to study the effect of exploratory factors, such as 'academic ability', 'ability to learn and apply knowledge', 'practical ability', and 'communication skills', on the quantity and quality of work. This study is interesting because it focused on Malaysia and Thailand as the middle-income countries that lead Southeast Asia in the development of TVE. In both countries, the government, educational leaders and the private sector value the expansion of TVE, and have high expectations of investment education, and have embraced cooperation with industries in developing work skills through the WIL system. This study is an extension of new findings because most of the previous research conducted a comparison of the education systems in both countries; no studies compared the employability skills of TVE students after the placement according to the perception of the mentor in the global industry. An understanding of mentors' perceptions of employability skills may give insight into how students are likely to receive sustainable employment development to building a more sustainable society through the skills and knowledge of their students. The findings are useful for TVE students, counsellors and educational institutions to comprehend the level of students' employability skills and set guidelines for further development.

## 2.1 Concept of employability skills

Employability skills are frequently used interchangeably with the work-readiness skills (Rowe & Zegwaard, 2017; Shafie & Nayan, 2010), and refer to the core skills and traits required to acquire and retain a job (Abas & Imam, 2016). Employability skills have been used to promote employment, and increase competitiveness in the labour market at the national, regional and local levels (see for example Jagannathan & Geronimo, 2013; McQuaid & Lindsay, 2005; OECD, 2016). Yorke (2006) defined employability as *'a set of achievements - skills, understandings and personal attributes - that make individuals more likely to gain employment and be successful in their chosen occupations, which*

*benefits themselves, the workforce, the community and the economy (p. 8)*'. WIL has been regarded as an important approach to promote employability by producing and developing skilled and technical human resources to match the international trends, quality and standards (OVEC, 2018a). To achieve this goal, Thailand (NESDB, 2016; Srisa-an & Pramoolsook, 2018) and Malaysia (Ibrahim & Jaaffar, 2017; Maelah, Muhammaddun Mohamed, Ramli, & Aman, 2014; Saat, Yusoff, & Panatik, 2014) have jointly developed students' employability through academic programs, and WIL processes, to ensure the commitment to the labour market.

## 2.2 Technical and vocational education in Thailand

TVE in Thailand is mainly under the Office of Vocational Education Commission. The concept of vocation management in Thailand started systematically as an educational path in 1898, and the first TVE was established in 1910 (OVEC, 2018b). In 2018, Thailand had 429 public TVE institutions and 486 private institutions (OVEC, 2018a). Although there is a sufficient number of TVE institutions, Thailand's TVE programmes are not known for producing highly qualified students. According to 2018 World Economic Forum Report on the global competitiveness, based on the assessment of 140 countries, Thailand was ranked 75th, 61st and 88th on quality of vocational training, skillset of graduates and ease of finding skilled employees, respectively (Schwab, 2018a); in the report, the global competitiveness index is measured partly using the indicators related to TVE in Fig. 1, such as 'innovation capability', 'critical thinking in teaching', 'ease of finding skilled employee', 'skillset of graduates', 'quality of vocational training', and 'higher education and training'.

Thailand's TVE does not hold a high status in people's minds; people often think TVE institutions are mainly for students with poor family background or for students who have failed to join or stay in general education (Burapharat & Chupraditand, 2009). The studies of Amornvuthivorn (2016) and Phalasoorn (2017) indicated that in the perspective of Thai society and enterprises, TVE in Thailand has not been able to effectively train technicians; many Thai TVE students still lack skills to get an employment in the potential job market. As the World Bank (2008) pointed out, more than 43% of the country's enterprises identified Thai workers as having insufficient basic and technical skills. Those reports reflected an urgency for Thailand to shape the employability skills of TVE students to meet the requirement of higher skills for all jobs and to add additional English proficiency skills to support the internationalisation processes of industries (ADB, 2015). To address this issue and raise the level of confidence in the quality of TVE students in the National Education Plan 2017-2036 and the 12th National Economic and Social Development Plan (2017-2021), the Thai government announced that there needs to be improvement in the capacity of TVE programmes to equip students with the essential skills required by the labour market by promoting more incentive mechanisms aimed at attracting students and medium-scale workplaces to take part in WIL programmes (NESDB, 2016).

## 2.3 Technical and vocational education in Malaysia

The formal TVE in Malaysia was started in 1897 by the British to train mechanics to work in the railways; later, after independence in 1957, the new TVE system was established as a major component of skills training and development (Ramasamy & Rowley, 2013). All standardisation and certification of occupational skills in Malaysian are based on the National Occupational Skill Standards and Certification System, which is managed by the Department of Skill Development (Hussein, Abidin, & Hamzah, 2016). In 2005, the Malaysian government introduced the National Dual Training System in TVE (Sauffie, 2015), which mainly aimed to establish a closer cooperation between TVE institutions and industrial employers for skill development (Sauffie, 2015) to meet the nation's requirements for skilled workers (Onn, 1986).

Although the World Economic Forum has ranked Malaysia highly among 148 countries worldwide (Fig. 1) in terms of quality of vocational training (9th), skillset of graduates (6th) and ease of finding skilled employees (4th) (Schwab, 2018b), the country has been concerned about a serious shortage of skilled TVE workers and a skills mismatch with employer needs, especially with regard to soft skills and English proficiency (Razak, Yusof, Syazana, Jaafar, & Talib, 2014). In order to improve the workforce and address this challenge, the five-year 11th Malaysia Plan development (2016-2020) therefore focuses on TVE transformation by enabling an industry-led approach in building human capital and developing skills to meet the industry demands and support the migration of all economic sectors (Prime Minister's Department, 2016). To increase labour efficiency and productivity, Malaysia launched the Malaysia Productivity Blueprint in 2017 (Prime Minister's Department, 2017), focusing on shifting higher-skilled workers and productivity improvement to meet the demands of the future economy. WIL has promised to build employability skills' level in the country (Saat, Yusoff, & Panatik, 2014). In an effort to engage industrial partners, Malaysia identified Industry Lead Bodies for each industry sector as strategic partners in identifying the skill needs for particular industries, and driving the implementation of skills development and training programmes to meet those needs (Ramasamy & Rowley, 2013).

Those features of TVE fields that Thailand and Malaysia have been facing would be closely related to improving productivity and quality in all industries and international competitiveness of the country.

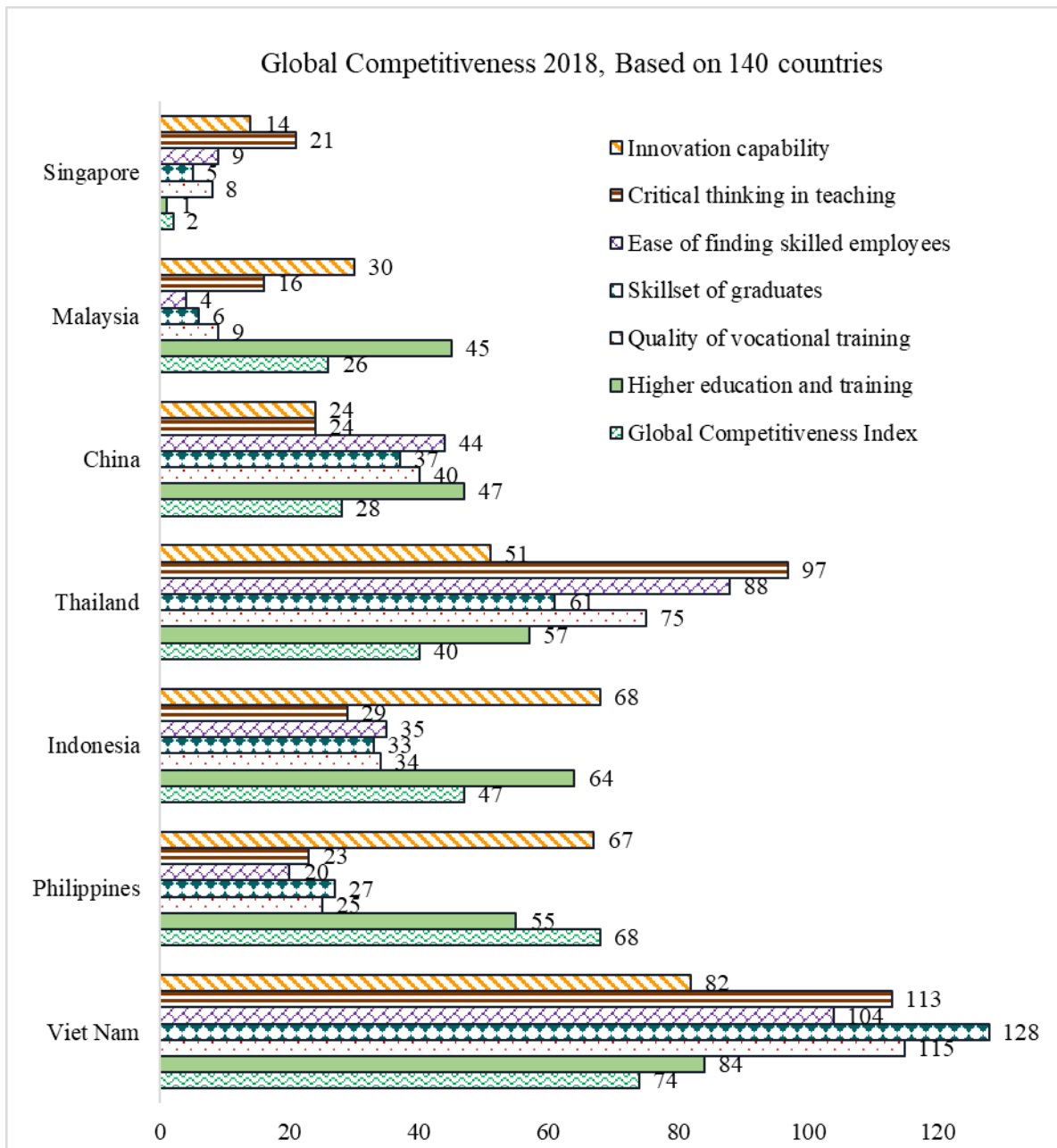


Fig. 1: Global competitiveness of Thailand, Singapore, Malaysia, China, Indonesia, Philippines and Viet Nam (2018).

Source: World Economic Forum: The Global Competitiveness Report 2017-2018 (Schwab, 2018a) and the Global Competitiveness Report 2018 (Schwab, 2018b).

## 2. Methods

In this section, participants, instrument, data collection procedure, and data analysis used in this work were discussed in detail. To compare the level of employability skills between Thai and Malaysian TVE students, as well as between male and female students, the independent *t*-test was used. Multiple linear regression analyses were employed to study the effect of exploratory factors on the quantity and quality of work.

### 2.1 Participants

Thirty mentors at WD were asked to assess a number of their students in the Thai-Malaysia IVEP. A total of 173 TVE students were assessed. The majority of the mentors (43.33%, *n* = 13) were supervisors from the Development Engineering Department, 33.33% (*n* = 10) were from the Test Engineering Department, 13.33% (*n* = 4) were from the Process Engineering Department and 10.00% (*n* = 3) were from the Quality Engineering Department. The mean age of

students in all cohorts was 19.12 years ( $SD = 1.04$ ). All students from both countries were placed in engineering departments. There were 90 Thai students provided useful data for analysis. % Out the total, 70 ( $n = 63$ ) were male, and 30.00% ( $n = 27$ ) were female. The mean age of these students was 18.79 years ( $SD = 1.00$ ). Whereas a total of 83 Malaysian students participated in this research, in which 60.24% ( $n = 50$ ) of students were males and 39.76% ( $n = 33$ ) were females. The mean age of Malaysian students was 19.49 years ( $SD = 0.96$ ) (see Table 1).

**Table 1-Demographic characteristics of students.**

Variables	Thai ( $N = 90$ )		Malaysian ( $N = 83$ )		Total ( $N = 173$ )	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
<i>Gender</i>						
- Male	63	70.00	50	60.24	113	65.32
- Female	27	30.00	33	39.76	60	34.68
<i>Age</i>						
	$M = 18.79$ $SD = 1.00$		$M = 19.49$ $SD = 0.96$		$M = 19.12$ , $SD = 1.04$	
- 17 years	8	8.89	-	-	8	4.62
- 18 years	28	31.11	13	15.66	41	23.70
- 19 years	33	36.67	29	34.94	62	35.84
- 20 years	17	18.89	29	34.94	46	26.59
- 21 years	4	4.44	11	13.25	15	8.67
- 22 years	-	-	1	1.20	1	0.58
<i>Cohort</i>						
- 2015	30	33.33	30	36.14	60	34.68
- 2016	15	16.67	18	21.69	33	19.08
- 2017	29	32.22	19	22.89	48	27.75
- 2018	16	17.78	16	19.28	32	18.50

## 2.2 Instrument

This study used a questionnaire that addressed 16 main aspects of employability skills, which were developed by the Human Resources Department of WD to assess students' employability skills after completing Thai-Malaysia IVEP. They were 'quantity of work', 'quality of work', 'academic ability', 'ability to learn and apply knowledge', 'practical ability', 'judgment and decision making', 'planning management', 'communication skills', 'responsibility and dependability', 'interest in work', 'initiative and self-starter', 'response to supervision', 'personality', 'interpersonal skills', 'discipline and adaptability to a formal organization', and 'ethics and morality'. The measurement scale used was a 10-point rating scale ranging from 1 (*unsatisfactory very strongly*) to 10 (*excellent*). The assessed skills were based on students' duties and responsibilities and desired and the outcomes of the WD international WIL programme, as well the most in-demand skills from major international employers as depicted in Table 2.

To measure internal consistency, Cronbach's alpha reliability ( $\alpha$ ) was performed. The instrument showed strong reliability for the full participant group ( $\alpha = 0.95$ ) as well as for Thai ( $\alpha = 0.88$ ) and Malaysian ( $\alpha = 0.92$ ) students. This meant that the instrument used was acceptably reliable.

## 2.3 Procedure

Data were collected from mentors of students, who participated the international WIL programme in 2015, 2016, 2017 and 2018; the international WD-WIL programme process in the Thai-Malaysia IVEP lasted between four and six months. Mentors were asked to assess each student's employability skills and complete an assessment feedback sheet. They completed the questionnaire independently; all feedback from the mentors were returned to the HR department. There may have been mentors who assessed more than one student per period; the permission to use this data was obtained from the HR department. Ethical clearance was obtained to protect all participants in the study.

## 3.4 Data analysis

The data were analysed to determine descriptive statistics for demographic variables and for the scale scores of the employability skills. To fulfill the first and second objectives, the independent *t*-test was used to determine whether

there is a significant difference between the means of the two independent groups, Thai and Malaysian TVE students, as well as the means for students from different genders in each country. Pearson correlations were performed to test the relationship between variables. For the third objective, multiple linear regression analyses were conducted to determine the exploratory factors influencing ‘quantity of work’ and ‘quality of work’.

### 3. Results

#### 3.1 The differences in mean scores of employability skills by country and gender

According to the mentors’ assessment, the gap in the mean scores for the aspects mentioned below between the two countries ranged from 0.22 to 1.91 (Table 2). The results of independent *t*-test in Table 2 indicated that Malaysian TVE students had better employability skills than Thai students with statistical significance at .01 and .001 level for fifteen aspects, except personality ( $t[169.73] = -1.70, p > .05$ ). The top five biggest differences in assessment results were in ‘initiative and self-starter’ ( $t[160.53] = -17.77, p < .001$ ), followed by ‘academic ability’ ( $t[171] = -13.99, p < .001$ ), ‘communication skills’ ( $t[167.26] = -13.91, p < .001$ ), ‘responsibility and dependability’ ( $t[171] = -12.90, p < .001$ ), and ‘interest in work’ ( $t[171] = -12.88, p < .001$ ). The skills with the smallest difference between Malaysian and Thai students were ‘interpersonal skills’ ( $t[171] = -3.29, p < .01$ ), ‘ethics and morality’ ( $t[161.10] = -3.45, p < .001$ ), and ‘quality of work’ ( $t[171] = -6.66, p < .001$ ).

As seen in Table 2, mentors assessed ‘ethics and morality’, ‘personality’, ‘interpersonal skills’, ‘response to supervision’ and ‘discipline and adaptability to a formal organisation’ as the five employability skills in which Thai TVE students possessed the highest ability. ‘Communication skills’, ‘academic ability’ and ‘planning management’ were assessed at the lowest competence level. The top five highest rated skills of Malaysian TVE students were ‘ethics and morality’, ‘discipline and adaptability to a formal organisation’, ‘response to supervision’, ‘interpersonal skills’ and ‘personality’, while ‘academic ability’, ‘planning management’ and ‘practical ability’ were assessed at lower levels than the other skills.

**Table 2 -Difference in mean scores of employability skills of Thai and Malaysian students measured based on independent *t*-test.**

Aspects	Thai		Malaysian		Mean difference	<i>t</i> -Test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
1. Quantity of work	7.94	0.99	8.88	0.77	0.94	-6.97***
2. Quality of work	7.96	0.86	8.80	0.79	0.84	-6.66***
3. Academic ability	7.17	0.72	8.75	0.76	1.58	-13.99***
4. Ability to learn and apply knowledge	7.32	0.98	8.92	0.94	1.59	-10.89***
5. Practical ability	7.32	0.91	8.78	0.84	1.46	-10.94***
6. Judgment and decision making	7.57	0.82	8.83	0.81	1.26	-10.19***
7. Planning management	7.26	0.73	8.75	1.02	1.49	-10.97***
8. Communication skills	7.08	0.78	8.80	0.84	1.72	-13.91***
9. Responsibility and dependability	7.47	0.85	9.04	0.74	1.57	-12.90***
10. Interest in work	7.53	0.90	9.16	0.74	1.62	-12.88***
11. Initiative and self-starter	7.34	0.64	9.25	0.76	1.91	-17.77***
12. Response to supervision	8.16	1.24	9.43	0.87	1.28	-7.87***
13. Personality	9.07	0.86	9.29	0.86	0.22	-1.70
14. Interpersonal skills	8.94	0.95	9.39	0.79	0.44	-3.29**
15. Discipline and adaptability to a formal organization	8.10	1.12	9.55	0.69	1.45	-10.37***
16. Ethics and morality	9.23	0.62	9.59	0.73	0.36	-3.45***
Overall	7.84	0.53	9.07	0.54	1.23	-15.12***

\*\*  $p < .01$ , \*\*\*  $p < .001$ ; Note: Scale scores ranged from 1 to 10.

Results of an independent *t*-test (Table 3) showed that there were no significant differences in all aspects of employability skills between male and female students of both countries ( $p > .05$ ). Therefore, results show that gender did not have any impact on the employability skills.

**Table 3 -Difference in mean scores of employability skills of male and female students measured based on independent *t*-test.**

Aspects	Thai					Malaysian				
	Male		Female		<i>t</i> -Test	Male		Female		<i>t</i> -Test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
1	7.92	1.00	8.00	0.96	-0.35	8.92	0.60	8.82	0.98	0.53
2	7.92	0.81	8.04	0.98	-0.59	8.78	0.82	8.82	0.77	-0.21
3	7.11	0.72	7.30	0.72	-1.12	8.74	0.69	8.76	0.87	-0.10
4	7.35	0.92	7.26	1.13	0.40	8.96	0.92	8.85	0.97	0.53
5	7.24	0.95	7.52	0.80	-1.35	8.80	0.88	8.76	0.79	0.22
6	7.59	0.82	7.52	0.85	0.36	8.80	0.83	8.88	0.78	-0.43
7	7.24	0.78	7.30	0.61	-0.35	8.62	1.10	8.94	0.86	-1.47
8	7.02	0.87	7.22	0.51	-1.15	8.78	0.79	8.82	0.92	-0.20
9	7.46	0.91	7.48	0.70	-0.11	9.02	0.74	9.06	0.75	-0.24
10	7.46	0.93	7.70	0.82	-1.18	9.18	0.72	9.12	0.78	0.35
11	7.37	0.66	7.30	0.61	0.47	9.34	0.77	9.12	0.74	1.28
12	8.21	1.27	8.04	1.19	0.59	9.48	0.89	9.36	0.86	0.59
13	9.13	0.91	8.93	0.73	1.02	9.32	0.87	9.24	0.87	0.40
14	8.98	1.02	8.85	0.77	0.60	9.36	0.78	9.42	0.83	-0.36
15	8.03	1.15	8.26	1.06	-0.88	9.58	0.67	9.52	0.71	0.42
16	9.30	0.66	9.07	0.47	1.84	9.62	0.70	9.55	0.79	0.45
Overall	7.83	0.57	7.86	0.43	-0.24	9.08	0.53	9.06	0.58	0.14

\*  $p < .05$ , \*\*  $p < .01$ .

### 3.2 Correlations analysis

Before performing regression analysis, the strength and direction of the association between two variables were examined to ensure that the multicollinearity did not exist. Pearson correlation ( $r$ ) was constructed to test the correlation of quantity of work, quality of work, and other variables of employability skills (Table 4). The results revealed that most of these correlations had positive statistical significance ( $p < .05$ ). There were a few pairs that had no statistically significant correlation ( $p > .05$ ). Because the correlation coefficients were in the range between 0.005 and 0.796, the multicollinearity was confirmed not exist and the regression analysis could be made with confidence (Daoud, 2017).

### 3.3 Investigating effects of exploratory variables on quantity and quality of work

In this part, two models were analysed to investigate the exploratory variables influencing quantity of work (Model 1) and quality of work (Model 2) by using multiple linear regression analysis (Table 5). In Model 1, quantity of work was considered the dependent variable, while the other variables were exploratory (or independent) variables. The results demonstrated that the variables that had significantly positive influence on the 'quantity of work' were 'personality' ( $\beta = 0.226, p < .05$ ), 'planning management' ( $\beta = 0.221, p < .05$ ), 'interpersonal skills' ( $\beta = 0.212, p < .05$ ) and 'quality of work' ( $\beta = 0.208, p < .05$ ).

Model 2 was constructed using quality of work as the dependent variable, while the other variables were considered exploratory variables. The results showed that 'quality of work' was significantly positively predicted by 'ability to learn and apply knowledge' ( $\beta = 0.381, p < .05$ ), 'judgment and decision making' ( $\beta = 0.284, p < .01$ ), 'discipline and adaptability to a formal organisation' ( $\beta = 0.189, p < .05$ ), 'ethics and morality' ( $\beta = 0.170, p < .05$ ) and 'quantity of work' ( $\beta = 0.143, p < .01$ ). In addition, in Model 2, it was found that 'initiative and self-starter' had a negative influence on quality of work ( $\beta = -0.236, p < .05$ ).

Regarding gender (code 0 for male, 1 for female) and age variables, there was no statistical significance on either quantity or quality of work. The value of adjusted  $R$ -squared (Table 5) is the degree of variance in the dependent variable explained by the exploratory variables, showing that Model 1 could explain 40.40% of the variation in 'quantity of work', whereas in Model 2, there was 55.50% variation in satisfaction in the eighteen exploratory variables (see Table 5).



1

**Table 4-Correlation matrix among aspects of employability skills.**

Aspects	Malaysian students															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1		.418**	.341**	.238*	.335**	.338**	.301**	.226*	.521**	.247*	.177	.296**	.309**	.196	.312**	.300**
2	.301**		.559**	.369**	.481**	.592**	.176	.395**	.491**	.471**	.268*	.483**	.302**	.534**	.459**	.441**
3	.328**	.446**		.514**	.445**	.780**	.527**	.433**	.622**	.287**	.384**	.534**	.428**	.405**	.505**	.510**
4	.228*	.736**	.573**		.547**	.607**	-.022	.226*	.496**	.194	.490**	.447**	.436**	.404**	.414**	.445**
5	.358**	.306**	.584**	.436**		.447**	.276*	.403**	.659**	.270*	.429**	.495**	.356**	.419**	.317**	.467**
6	.192	.481**	.558**	.551**	.444**		.479**	.452**	.479**	.248*	.465**	.451**	.525**	.330**	.501**	.540**
7	.395**	.288**	.474**	.371**	.689**	.394**		.466**	.286**	.069	.005	.152	.125	.062	.168	.185
8	.209*	.289**	.553**	.436**	.659**	.473**	.498**		.327**	.367**	.178	.507**	.387**	.304**	.455**	.398**
9	.152	.228*	.384**	.235*	.326**	.148	.386**	.468**		.412**	.502**	.523**	.385**	.495**	.417**	.455**
10	.122	.176	.414**	.185	.610**	.255*	.355**	.641**	.272**		.598**	.535**	.310**	.539**	.620**	.546**
11	.013	.437**	.337**	.502**	.426**	.523**	.268*	.508**	.218*	.458**		.511**	.592**	.482**	.475**	.537**
12	.153	.248*	.308**	.336**	.402**	.363**	.303**	.391**	.016	.286**	.370**		.690**	.760**	.735**	.796**
13	.336**	.248*	.145	.094	.159	.169	.098	.160	.065	.244*	.040	.463**		.494**	.654**	.614**
14	.439**	.134	.275**	.188	.475**	.227*	.394**	.187	-.037	.257*	.124	.605**	.472**		.656**	.652**
15	.289**	.482**	.325**	.307**	.276**	.352**	.381**	.234*	.162	.213*	.312**	.407**	.331**	.352**		.773**
16	.150	.463**	.264*	.300**	.224*	.289**	.215*	.148	.047	.117	.221*	.346**	.245*	.308**	.370**	

Thai Students

2 Note: \* $p < .05$ , \*\* $p < .01$ ; Correlation coefficients of Thai Students are below the diagonal; Above the diagonal line represents the correlation of Malaysian students.

**Table 5- Results of the multiple linear regression analyses (N = 173)**

Explanatory variables	Model 1			Model 2		
	DV: Quantity of work			DV: Quality of work		
	<i>B</i>	$\beta$	<i>t</i> -Test	<i>B</i>	$\beta$	<i>t</i> -Test
Constant	.203		.133	1.401		1.151
Gender (0 = male, 1 = female)	-.096	-.046	-.738	.087	.045	.844
Age (years)	.052	.054	.811	-.016	-.017	-.305
<i>Aspects</i>						
1				.132	.143	2.088*
2	.208	.192	2.088*			
3	.099	.107	.773	.010	.011	.093
4	.020	.025	.212	.283	.381	3.887**
5	.155	.176	1.470	-.026	-.032	-.311
6	-.089	-.091	-.741	.256	.284	2.741**
7	.221	.254	2.450*	-.097	-.121	-1.331
8	-.032	-.038	-.303	-.008	-.010	-.091
9	.118	.131	1.226	.073	.088	.948
10	-.016	-.019	-.157	.116	.146	1.407
11	-.085	-.100	-.753	-.185	-.236	-2.081*
12	-.157	-.197	-1.789	-.036	-.049	-.511
13	.226	.195	2.593*	-.045	-.042	-.639
14	.212	.191	2.115*	-.002	-.002	-.022
15	.107	.126	1.283	.148	.189	2.259*
16	-.127	-.088	-1.088	.225	.170	2.471*
R-Squared	.460			.599		
Adjusted R-Squared	.401			.555		

Note: \* $p < .05$ , \*\* $p < .01$ ; *B* = Unstandardized Coefficients;  $\beta$  = Standardized Coefficients; DV = Dependent variable.

#### 4. Discussions

In this section, the employability skills of Thai and Malaysian TVE students were discussed based on the statistical results in Table 2. Then, the difference between the mean scores of employability skills of male and female students in each country was analysed based on the statistical results in Table 3. Finally, the effect of exploratory factors on the quantity and quality of work was discussed based on the results of the multiple linear-regression analyses in Table 5.

##### 4.1 Difference in employability skills between Thai and Malaysian TVE students

Findings indicated that Malaysian TVE students had better employability skills than Thai students in all aspects by mentors' feedback. These results are consistent with the report of the World Economic Forum's global competitiveness of 2018 (Schwab, 2018a, 2018b), which stated that quality of education was one of the most pressing problems facing Thailand because the country has frequently been ranked poorly in terms of education system and skills availability, while Malaysia (26th) was the top-ranked country in the group of upper-middle income countries and in particular had excellent performance compared with international competitors in terms of employees' skills development (4th), skillset of graduates (6th) and quality of vocational training (9th) (Schwab, 2018a, 2018b). In the last decade, the governments of the two countries have implemented many national policies and strategies for enhancing employability skills of TVE students and invested a large budget to meet TVE career demands. However, paradoxically, it was found that Thai TVE students are not recognised for the quality of employability skills by society. Thailand has been successful in increasing the number of students in TVE institutes, but it is difficult to guarantee their high skills. Many previous studies of international companies reported that when compared with the major Association of Southeast Asian Nations countries, Thailand had the most severe shortage of skilled labour in technicians (ILO, 2016), engineers and even managers (JETRO, 2006). Although Thailand's TVE institutions have made great efforts to collaborate

sustainably with the industrial sector to develop students' skills, the Thai TVE system still seems not fully equipped to provide the right skills to match professional qualifications for specific job demands (World Bank, 2008). According to UNESCO (2011), the qualifications of TVE manpower that were lacking in Thailand included communication skills, computer and ICT-using abilities, management, calculation skills, problem solving, teamwork, responsibility, honesty, tolerance, discipline, punctuality and leadership.

The findings in this study showed the highest mean difference between Thai and Malaysian TVE students for the 'initiative and self-starter' skill. The result confirmed previous studies of Khampirat, Pop and Bandaranaike (2018), which showed that Thai students perceived themselves as having relatively lower initiative and motivation to be a self-starter. This is because this skill is related to the capability of working by themselves and seeking out new work of students as opposed to wasting time idly. Thai students must therefore improve themselves a lot in this matter because many employers look for 'initiative and self-starter' as a 'must do' skill for every position (ILO, 2015) in demonstrating clearer working plans and knowledge implementation (Frese, Fay, Hilburger, Leng, & Tag, 1997), as well as time value at work.

This research emphasised that 'academic ability', referring to having sufficient academic knowledge to finish assignments, was ranked in the bottom three skills for both Thai and Malaysian TVE students. In the same line, Khampirat and Pop (2017) found that the basic issues of Thai education and workforce were the severe shortage of academic knowledge and work competency of new graduates. Likewise, the Ministry Economic Affairs of Malaysia (Ministry of Economic Affairs, 2018) reported there are a number of failures of TVE institutions in Malaysia due to lack of awareness of new knowledge, resulting in the lack of academic ability for students to succeed in a globalised economy.

Mentors also pointed out that Thai TVE students possessed the lowest communication skills; similarly, communication skills for Malaysian students were rated quite low compared to other skills. This finding is consistent with Ting, Marzuki, Chuah, Misieng, and Jerome (2017), Abdullah and Majid (2013) and Mutalib, Kadir, Robani, and Majid (2014) who observed that Malaysian TVE students did not have the necessary English proficiency and communication skills for workplace communication. They cannot use English properly and lack confidence when making oral presentations (Yasin, Shaupil, Mukhtar, Ghani, & Rashid, 2010). In Thailand as well, many employers said that communication skills have been considered as one of the key competencies valued for employment (World Bank, 2014), but most Thai TVE students are lacking in this ability, especially English proficiency (Bateman & Coles, 2017). Ting et al. (2017) concluded that in many countries, including Thailand and Malaysia, the high unemployment rate among new graduates is often attributed to their lack of English proficiency and communication skills.

This study found that mentors assessed both Thai and Malaysian TVE students higher on 'ethics and morality' than on other skills. This may be possible as a basic of soft or green skills that play an important role in sharpening an individual's ethical decisions on a daily basis (Ngang & Chan, 2015) that can lead to the ability to respect for diversity and working with others with high moral standards in the workplace (Fien, Maclean, & Park, 2009). As previously discussed, although TVE students were seen as causing social problems in some developing countries, ethics and morality were therefore cultivated as a core process of developing TVE students because they are the heart of social sustainable development (Fien et al., 2009) to prepare them for citizenship in the twenty-first century.

Findings demonstrated that Malaysian TVE students possessed more employability skills than Thai TVE students; this meant that Malaysian TVE students had a better blend of hard and soft skills in the workplace which were highly valued by the international and domestic high-tech industry (Ang, 2015). This shows that, in the era of globalisation and the need for a highly skilled workforce, Thai TVE institutes should produce and develop skilled and technical human resources to match the international trends, quality and standards in order to get appropriate employment and be able to compete in the global job market.

In addition, for Thai TVE students, there are still large gaps in terms of employability skill sets required by the employers in a digital economy. Internationalisation efforts were also impeded by lack of English proficiency and communication skills, academic and practical ability that reflected difficulty in understanding the international business environment, limited network construction and inability to compete extensively with higher wage. Perhaps Thai students' lack of capacity and capability was related to lack of awareness and emphasis to the required core skills of the workplace resulting to lack of essential intellectual curiosity and low level of initiative (Power, 2015).

## 4.2 Difference in employability skills of male and female students

It appeared that there were no significant differences in employability skills level between male and female students in both countries. This finding is in accordance with the previous studies of Bakar and Hanafi (2007) and Idaka and Uzoechi (2016), who pointed out that both male and female students can effectively adapt themselves to meet the requirements of the placement (Cifre, Vera, Sánchez-Cardona, & de Cuyper, 2018); the adaptability is traditionally considered to be a key competency for career success (Forrier, Verbruggen, & De Cuyper, 2015). This finding is also in line with the results of Kazilan, Hamzah, and Bakar (2009), who showed that the most male and female TVE students did not have difference skills in each aspect, except for 'basic and information skills', for which female has higher than male. Likewise, Pop and Khampirat (2019) found that females tend to have higher scores than males only in achievement motive. On the other hand, Cifre et al. (2018) indicated that perceiving employability skills is different

between genders. The results in this work, therefore, suggested that gender roles in employability skills should be studied in detail.

### **4.3 Factors affecting quantity and quality of work**

In the current study, personality had a positive effect on quantity of work. TVE students with high planning management, interpersonal skills and quality of work were likely to achieve a larger quantity of work. Moreover, the regression model of quality of work (Model 2) indicated that 'ability to learn and apply knowledge', 'judgment and decision making', 'discipline and adaptability to a formal organisation', 'ethics and morality' and 'quantity of work' had a positive effect on quality of work. These findings tend to endorse the view that personality (Cervone & Pervin, 2013) and soft skills (Amiruddin, Ngadiman, Abdul Kadir, & Saidy, 2016) can influence students' performance, including the quantity and quality of work, which has been documented in several studies. Moreover, soft skills can serve as important capital in propelling students towards greater achievement and shaping an individual's success, both during studying and in the workplace (Schulz, 2008). Likewise, Ibrahim, Boerhannoeddin, and Bakare (2017) showed that soft skills and quality of soft skills training programmes had a very high and lasting impact on employee work performance, which were very important for organisational survival. Since quantity and quality of work are foundation performance expectations of any duties, TVE institutions and mentors should clearly set the expectations of the desired results that must be achieved, and suggested the needed methods for building success of students, for example, psychological factors and applying knowledge to work. Moreover, participating and working with a highly talented team will support TVE students to gain high professional skills that will affect the chances of obtaining good employment and success in future careers. Therefore, to effectively prepare students for careers in ever-changing workplaces, TVE institutions should select the quality of the workplace for the WIL, especially when working with international WIL. As Smith, Ferns, and Russell (2019) presented, the quality of work placement had a greater impact on employability skills than the quantity or structure of placements.

## **5. Limitations and Future Study**

The limitations of this study included the fact that it was conducted to assess TVE students who participated in international WIL programmes in a single global industry, making it too context-specific. Therefore, care should be taken in generalising the findings. In addition, this research design assessed employability skills only after students entered the workplace. The next study, therefore, should include reviews of employability data of WIL prior to employment to be able to check the difference before and after placement. To support the construct validity of the instrument, future research may test validation of the instrument in different contexts, and consider the influence of students' backgrounds and quality of WIL pedagogy on employability skills.

## **6. Conclusions**

In this work, employability skills of TVE students in Thailand and Malaysia, the difference between the mean scores of employability skills of male and female students in each country, and the effect of exploratory factors on the quantity and quality of work were studied using a questionnaire that addressed 16 main aspects of employability skills and statistical methods. The results showed that most of the Malaysian students had better employability skills than Thai students and there were no significant differences in employability skills between male and female students in each country. It appeared that 'personality' had a positive effect on 'quantity of work' and TVE students with high 'planning management', 'interpersonal skills' and 'quality of work' were likely to achieve a larger 'quantity of work'. The regression model of quality of work also indicated that 'ability to learn and apply knowledge', 'judgment and decision making', 'discipline and adaptability to a formal organization', 'ethics and morality' and 'quantity of work' had a positive effect on 'quality of work'. The results in this work suggested that participating and working with a highly talented team will support students in gaining strong professional skills, and to effectively prepare students for professional work and careers, TVE institutions should carefully assess the quality of the WIL environment, especially for international WIL. Most importantly, in the process of international WIL, to achieve effective results, the reflections of mentors should consider the self-development aspirations of students. Awareness of the importance of good cooperation between TVE institutions and enterprises, as well as quality of the workplace, is also important in the skill development. In summary, not all students will have the opportunity to work in international WIL organisations. Therefore, TVE institutions should carefully select the workplace for students, and must cultivate students with the necessary skills to help create opportunities for internships in international organisations and for future work.

### **Acknowledgement**

This work was supported by the Suranaree University of Technology research and development fund.

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