ASSESSING INDUSTRY NEEDS AMONG TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) HIGHER EDUCATION: THE CASE STUDY

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ASSESSING INDUSTRY NEEDS AMONG TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) HIGHER EDUCATION: THE CASE STUDY

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A report submitted in partial fulfillment of the requirements for the degree of

Bachelor of Technopreneurship with Honors

Fakulti Pengurusan Teknologi dan Teknousahawanan

Universiti Teknikal Malaysia Melaka

January 2023

DECLARATION

I declare that this report Final Year Project entitled “Assessing Industry Needs among Technical and Vocational Education and Training (TVET) Higher Education: The Case Study” is the result of my own labour, with the exception of quotes that are referenced in the text.

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DEDICATION

This final-year project effort is dedicated to my dear parents in appreciation of their unending support, love, and prayers.

For my supervisor whom have mentored me and provided me with a lot of support,

Profesor Madya Dr Amiruddin Bin Ahamat (UTeM)

For my panel,

Mr.Albert Feisal@Muhd Feisal Bin Ismail (UTeM)

And lastly to all my beloved friends that always help me and support me from the beginning until the end of my project.

ACKNOWLEDGEMENTS

Alhamdulillah, I am grateful to Allah SWT for providing me with the chance, patience, and bravery to accomplish my final-year project. I want to thank my panel, Mr. Albert Feisal@Muhd Feisal Bin Ismail, and my supervisor, Profesor Madya Dr Amiruddin Bin Ahamat, for helping me this semester and for their guidance, motivation, and guidance in finishing my project final year. I appreciate being acknowledged and like working with my boss.

I appreciate the work of all the professors and employees at the Faculty of Technology Management and Technopreneurship (FPTT). I want to thank my friends for their support, encouragement, and helpful criticism during our connection, especially the BTECs in my cohort. They volunteered their skills and time to assist me out.

Thank you.

ABSTRACT

Numerous TVET institutions have highlighted involvement in the industry as a marketability criterion for judging the quality of TVET higher education graduates. The curriculum provides education and training with a focus on industrial techniques for TVET higher education with an occupational orientation. Therefore, this study is to assess the industry's higher education requirements for TVET. This study was conducted using qualitative analysis techniques, and data collection was conducted in Melaka with four individuals from different industrial companies.

This study was conducted utilising qualitative analysis techniques, and data collection was undertaken in Melaka with four individuals from different industrial companies. The study's findings indicate that the perception of TVET higher education in relation to the industry's needs must be enhanced, particularly in terms of TVET higher education's capabilities. Indirectly, this study explains how vital TVET higher education skills are to the industry in order to maintain the quality of TVET higher education. Consequently, it can help TVET higher education students who have not yet entered the industry be better prepared, particularly in terms of the skills required by industry.

Keywords: TVET, TVET higher education, higher education

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CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

The case study of assessing industry needs in Technical and Vocational Education and Training (TVET) higher education is the subject of this chapter. There are eight chapters in all that deal with this research topic. In addition, background of research, problem statement, research questions, research objectives, research scope, limitation of study, definition of terms, significant study and summary is covered in this chapter.

1.1 BACKGROUND OF RESEARCH

Technical and vocational education and training (TVET), which equips young people with the ability to assist in the workplace, includes academic, semiformal, and training. Technical and Vocational Education and Training (TVET) institutes in Malaysia Innovation and technology have fuelled economic progress for ages (Salman et al., 2020). TVET refers to a variety of learning activities that take place in a number of contexts and are aimed at acquiring the skills required for certain labour market jobs (King, 1993); (Rojewski, 2002); (UNESCO, 2006). Governments of developing nations usually prioritise investing in education, especially Technical and Vocational Education and Training (TVET), since it is a

crucial tool for building skilled human capital and assuring equal job and income creation possibilities (Yamada and Otchia, 2021).

The national school system's technical and vocational education and training (TVET) programme are among the nation's top goals for growth of the economy (Mohammad Yunus and Mohamad Hapni Joblie, 2022). The shift toward making Malaysia a productive developed country through developing competent human capital in TVET serves for a catalyst for the nation's economic progress (Mohammad Yunus and Mohamad Hapni Joblie, 2022). The Fourth Industrial Revolution's structure (4IR), the government has undertaken many measures, including a professional development programme for TVET instructors (Ministry Of Education, 2018).

By obtaining the necessary information and skills, Technical and Vocational Education and Training (TVET) seeks to produce grads whom were prepared for work. Additionally, it encourages training in higher education, conversation, problem - solving skills, and thinking skills (Jabarullah and Iqbal Hussain, 2019). A educational plan that emphasises the need to produce graduates who are integrative, standardised, globally, entrepreneur, and lifetime learning has been announced by Malaysia's Ministry of Higher Education in accordance with these imperatives (Hasim et al., 2016). TVET has risen to the forefront for accomplishing these goals since Malaysia aspires to see at most 30 percent of its workers educated as skilled workers around 2030 as meet market demands (Mohammad Hussain et al., 2021). Furthermore, Technical education and skills are essential for creating the human capital needed to turn emerging Malaysian nations are becoming fully developed nations (Omar et al., 2011). Education in technical and vocational subjects, or TVET, is essential not only for social inclusion but also for the expansion and improvement of the country.

In Malaysia, TVET aims to accomplish two things: first, it aims to generate skilled employees, and second, it aims to encourage the creation of skilled employees, or "k-workers," to satisfy the industry sectors' requirements that power the nation's continual growth (Omar et al., 2011). The 11th Malaysian Development Plan 2016-2020 highlights the Malaysian TVET agenda (11MP), which also tends to focus on enhancing life - long learning for training provided,

transforming TVET to meet industry demand, and enhancing the quality of education for improved student achievement and demonstrate the effectiveness (Mee Young Choi, 2021). TVET in Malaysia aims to produce skilled human capital by assuring higher levels of training and education that meet the demands of the labour market and provide opportunities for further education or business development. TVET is predicted to result in a better competent national workforce, which would boost Malaysia's economy has been growing (Minghat and Yasin, 2010). Then, Technical and Vocational Education and Training (TVET) offers a practical alternative route for high school dropouts and students who perform below their capacity in school to realise their full potential and develop stable and substantial professional careers.

Therefore, TVET is education and has training for them especially students such as vocational students, training institutes and so on for job preparation after graduation. According to Mohammad Hussain et al., (2021), to ready student and the others customers as the workforce, TVET gives development and skill. It also provides customized training skills for those who are working but need to update or pick up new skills to improve their chances of landing a job or to boost their output. Vocational skills can now lead to high-paying positions equivalent to those held by professional engineers (Edgar, 2019).

1.2 PROBLEM STATEMENT

The industry is most worried about a decline in product quality and a scarcity of student talents. According to Salman et al. (2020), the present TVET program in Malaysia mostly are supply-driven, despite the fact that the method is generally intended to fulfill actual or anticipated jobs market need, with little emphasis on matching training to existing jobs. Malaysian students continue to fall short of the criterion for good employees (Malaysian Employers Federation 2011) due to a lack of problem-solving abilities, which are part of employability skills (Zainaf, Robiah and Habibah, 2019). Then, if the industry has employees who do not or lack skills it will have problems for the industry. In contrast to academic students, TVET

students require a competency-based assessment because most sectors look for candidates that have great knowledge and abilities that provide something to the success and growth of the organisation, including communicating, organization, managing, character, and approach (Ismail & Abiddin, 2014).

In addition, according to Mohammad Hussain et al. (2021), to satisfy employment market needs, by 2030, Malaysia wants at least 30 percent of its workers to be high-skilled workers and to accomplish these goals, TVET has taken the top spot on the list of priorities. With that, TVET programmes should meet or exceed the standard criteria stipulated by the relevant sectors or companies. Nonetheless, our country has significant obstacles in delivering a qualified TVET workforce that fulfils industrial demand (Khirotdin et al., 2019). Meanwhile, according to Ramlee (2017), some of the problems that are associated with TVET include a negative perception of the programme, a governance body, a TVET framework, the competence of teaching staff, job mismatching, not being driven by industry, limited allocation, and uncompetitive salaries for TVET graduates. TVET places an increased emphasis on the provision of excellent education at all levels, with the end goal of creating graduates who are highly competent and skilled and who are able to perform well both inside and outside of an organisation (Ramamuruthy et al., 2020). This is due to the fact that modern employers want their workers to be proficient in both general and specialised forms of technology in order to be hired.

The needs and skill necessary for Technical and Vocational Education and Training (TVET) graduates remain unclear. Therefore, this case study was conducted to assessing industry needs among Technical and Vocational Education and Training (TVET) Higher Education.

1.3 RESEARCH QUESTIONS

The goals of this research can be determined by the following research question:

1) What relationship exists between TVET and industry?

2) What is the requirements required by TVET higher education towards the industry?

3) How does the skills required by TVET higher education towards the industry?

1.4 RESEARCH OBJECTIVES

As purpose of the study was to examine the industry needs among Technical and Vocational Education and Training (TVET) higher education. The specific objectives of this study are listed below based on the above-mentioned problem statement:

1) To examine the relationship exists between TVET and industry.

2) To determine the requirements required by TVET higher education towards the industry.

3) To investigate the skills required by TVET higher education towards the industry.

1.5 RESEARCH SCOPE

In this scope, the focus is primarily on assessing industry needs among Technical and Vocational Education and Training (TVET) higher education. This research will then discuss the needs and skills required by the industry that TVET higher education needs to meet.

The primary sectors to be examined in the research are the demands and skills that TVET higher education must satisfy for the industry. This is because most industries need skilled workers after they graduate. Thus, it is clear how important skills are especially for those who have graduated suit the requirements of the sector.

In this research, will take respondents from several industries of Melaka to identify the needs that TVET higher education must fulfil.

1.6 DEFINITION OF TERMS

Technical and Vocational Education and Training, (TVET)

TVET education is a skills-based education that focuses on employability skills in an industry (Mohammad Yunus and Mohamad Hapni Joblie, 2022). In essence, TVET stands for technical education or training that aims to develop skills for a person relevant to a vocation in order for that person to find a job and provide a living (Team, 2021). According to the Ministry of Education Malaysia (MOE) (2019) website, TVET stands for Technical and Vocational Education and Training, TVET is a career-oriented procedure of instruction and training with a major with a focus on industry practices, specific areas, TVET would establish its range on acknowledged employment standards, along with focus on motor abilities, useful meaning, and access to industrial training. TVET is defined as "education, training, and skill development in a wide variety of occupational domains - production, services, and livelihoods" (UNESCO, 2016).

Higher Education

By offering a solution to a filled educational path to top qualifying levels as Bachelor's and Master's degrees, higher education could be broadened to assist class mobility (Felce, 2019). After high school, higher education has been the third degree of learning. It includes either undergraduate or graduate courses and is frequently carried out at universities as well as further education institutions

(Nidirect, 2021). Higher education can increase their career opportunities and income potential by letting your studying in subject that motivates you (Nidirect, 2021).

Policy

A government policy would be a piece of law, a regulation, a process, an administrative decision, an incentive, or indeed a volunteer behaviour ((CDC), 2015). Usually, resources reflect policy choices while, various industry policies may have an effect on health ((CDC), 2015). Furthermore, an organisation follows or creates policies such principles, rules, guides, or structures to improvements in life expectancy objectives while, these are frequently laid forth in an easily accessible textual manner (Safeopedia, 2017). Policies are developed to drive and influence all important choices made inside the business, as well as to maintain all actions within a set of recognised parameters (Safeopedia, 2017).

Industry Demand

Industry demand is an industry's overall aggregate demand for products while, in order to calculate market share, company demand is frequently stated as a percentage of industry demand products (Team, 2021). The term "industrial demand" refers to the overall aggregate demand for a certain industry's goods, such as cement demand in the building sector (Jargons, 2016).

Decent Jobs

According to International Labour Organization (2021), decent job as defined "productive work for women and men in conditions of equality, security, and human dignity" while, decent job is critical to establishing a high-quality education workforce. Improved chances for economic development and career integration, allowing individuals to describe about there organising, concerns and participating in decisions affecting, ensuring equitable access to and treatment from it are all part of this concept; also it relates to career opportunities those are efficient and pay fair wages (International Labour Organization, 2021).

Skill Development

In the context of globalisation, skill development is critical to handle the possibilities and difficulties of changing economies and new technology (International Labour Organization (ILO), 2020). Skill development is the process of detecting and addressing skill deficiencies (Eline, 2021). Improve human beings' capacity to do a job-related action that leads to the effective completion of a task. It might be a type of intimacy in which knowledge is gained via precise and repetitive practise (Chale, 2021).

Employability skill

Employability skills are defined as the talent required to land and hold a job, and a more modern use of the word is to signify the education or fundamental talents that should be built upon to develop job-specific abilities (Kenayathulla, Aziah and Rahman, 2019). The skills needed to land, keep, and succeed in a job are known as employability skills (Stephen and Festus, 2022).

Communication

Giving and receiving information through verbal or non - verbal ways, including written, graphics as infographic, mapping, & charting, gestures, signalling, plus behaviours, constitutes the process of communication. Communication as defined "the creation and interchange of meaning" (Nordquist, 2021). In his 1992 book "Communication as Culture," media analyst and theorist James Carey described the communication are "a symbolic process by which reality is generated, sustained, healed, and modified," arguing that by discussing their experience with each other, we create the reality that exists (Nordquist, 2021).

Problem Solving

The process of addressing any kind of difficulty is called problem-solving while, there are several stages to this approach (Instagantt, 2022). These phases begin with identifying the problem and discovering its source while, after the issue and its cause have been determined, the following phase is to identify and execute possible remedies (Instagantt, 2022). Issue solving is the process of analysing a problem and addressing it in the best way feasible given the circumstances while, this process includes analysing the problem root cause analysis, developing

countermeasures, and applying the best solution for the scenario (Toolshero, 2022).

Time Management

Time management has been the coordination of tasks and activities to increase a person's ability's effectiveness while, to enable people to perform much better task in less time is the aim of time management (Wigmore, 2015). Planning ahead and exercising deliberate control over the amount of time spent on those tasks with the intention of boosting efficiency, effectiveness, and output while, it requires juggling a person's numerous obligations from work, social activities, families, hobby, and other pursuits with the passing of time (Stella Cottrell, 2013). When time is managed well, an individual may spend their money or complete chores within their own leisure and convenience (Stella Cottrell, 2013).

Technology Use

Researcher might think about giving up on latent measures completely when technology usage is the main factor of interest because "using" is so obviously present (Ellis, 2020). Muda and Landau (2019) discovered that the variable of application of technology has a positive and substantial influence on the level of audit quality and accountancy operations. Workplace technology use may therefore effect on or enhance ergonomics (Kadir et al., 2019; Clegg, 2000), as well as psychological elements of occupations (Demerouti, 2020; Cascio and Montealgre, 2016). Person-related factors, in addition to task-related conditions, are likely to limit or spur technology adoption for individuals with the same employment. Individual choices to utilise or not use technology drive the latter (Davis, 1989; Venkatesh et al., 2003; Williams et al., 2015).

Entrepreneurship

The entrepreneurial phenomena of intrapreneurship serves as an essential sounding board for entrepreneurship definitions (Prince, Chapman and Cassey, 2021). Entrepreneurship is a verb, according to the definition provided, that is entrepreneurship is defined here as a multi-faceted activity encompassing a wide range of behaviours, connecting the proposed definition with the field's trajectory,

this definition also implies that being labelled an entrepreneur requires engagement (Prince, Chapman and Cassey, 2021).

Networking Skills

The skills necessary for maintaining social or professional contacts are known as networking skills while, networking are crucial ability in business expansion, sales, and many other professions, it need networking skills to produce and sustain having connections with new people and to enhance anything of value (Team, 2022). According to the website University of Cambridge Judge Business School (2022), one of the most important talents for business owners is networking and one that you can practise on programmes like Enterprise Tuesday (Enterprise Tuesday is a series of evening talks and panel discussions with tech pioneers, business leaders and experienced entrepreneurs). Furthermore, the meaning of the networking are "the method of generating, building, and maintaining a network of advantageous ties with other people (Claudia and Brock Smith, 2021). Networking is the ability to share ideas and information with people and organisations that share your interests while, for mutual benefit, you develop enduring relationships with others (Harappa, 2021). Networking skills are the traits or talents needed to maintain interpersonal connections while, they assist in making touch and creating a conduit for two-way communication (Harappa, 2021). Aside from skill development, networking should become a habit because it may expedite your professional development and career (Harappa, 2021).

Critical Thinking Skills

According to the website Washington State University (2020), critical thinking are an associated to issue solve, but it goes farther than that. Entrepreneurs, as critical thinkers, do more than only solve issues. They are the finest at problem solving. Here to highest standard possible, anyone can make rational and informed judgments by using critical thinking (Will Erstad, 2018). The capacity to interpret information rationally and reach a reasonable conclusion is referred to as critical thinking while, it entails analysing information from sources including facts, information, observable occurrences, and study results (Doyle, 2022).

Creative Thinking Skills

A skill that enables you to perceive things from several angles and perspectives is creative thinking while, it's a creative thought process that yields unexpected results and novel approaches to problems (Tomaszewski, 2022). Ideas for creative thinking can be generated through brainstorming or lateral thinking (Tomaszewski, 2022). Creative thinking is the process of generating original answers to problems using one's abilities and soft skills (Rock Content Writer, 2020). Innovative thinking methods involve looking at a problem from several, original angles while using the proper tools to evaluate it and develop a plan of action (Rock Content Writer, 2020).

Customer Service Skills

Interacting with people, resolving problems, demonstrating patience and understanding, ensuring client satisfaction, and handling customer complaints are all examples of customer service skills while, successful customer service agents may significantly affect a company's bottom line (Streiff, 2022). Companies employ customer service professionals to answer customers' concerns, resolve technological issues, and collect money (Suttle, 2017). Depending on the sort of company setting in which they operate, the representatives frequently take queries or address issues over the phone or in person (Suttle, 2017). Furthermore, customer service skills are the traits, skills, techniques, and approaches employed to help clients solve issues and provide a positive experience (Glassdoor, 2021).

1.7 SIGNIFICANT OF STUDY

Industry is a major consumer for TVET graduates who already have postgraduate skills. In order to execute and promote sustainable development, technical and vocational education and training (TVET) must play a crucial part (Paryono, 2017). The industry will usually hire employees who have skills for example, an industry is easier if it hires employees who have graduated from their higher education after having the skills required for the industry. TVET institutions are key workforce providers who will be at the forefront of addressing sustainable concerns (Paryono, 2017).

Therefore, the findings of this study will be able to identify the industry needs that TVETs of higher education need to meet especially in terms of their needs and skills. It is also intended that the findings of this research will benefit higher education TVETs, especially in terms of the needs and skills they need to meet for an industry. By understanding the requirements that need to be met for an industry, higher education TVET would be able to fully understand and recognize an industry's demands.

1.8 SUMMARY

In this chapter, the researcher discussed the background of the study and problem statement. The purpose of this study was to assessing industry needs among Technical and Vocational Education and Training (TVET) higher education. The issue description made it possible to choose both of the research questions and research objectives. Additionally, the researcher discovered the scope of the study, limitation of this study, definition of terms and significant of study.

CHAPTER 2

LITERATURE REVIEW

2.0 INTRODUCTION

In this chapter, the researcher will identify how prior study may be used to provide knowledge and details, allowing the theoretical framework to be constructed. In addition, the researcher developed a theoretical framework to link the independent variable. It aided in developing a clear mind-set and direction with a better comprehension of vision from prior work that connected to the research questions and research objectives during the evaluation of the literature.

In this chapter, the researcher will discuss the assessing industry needs among TVET higher education by referring to the previous research which are TVET, higher education, policy, industry demand, decent jobs, and skill development.

2.1 TVET

TVET education is a skills-based education with a purpose on employability ability in an industry (Mohammad Yunus and Mohamad Hapni Joblie, 2022). According to the Ministry of Education Malaysia (MOE) website, TVET did stand for Technical and Vocational Education and Training. It is a career-oriented training and education method that places a strong with a focus on industry practises and niche fields. TVET must base its aim on acknowledged employment conditions, with such a focus on practical components, abilities, and exposed to training through industry. In essence, TVET stands for technical education or

training that aims to develop skills for a person relevant to a vocation in order for that person to find a job and provide a living (Team, 2021). TVET stands for "a wide variety of occupational domains - production, services, and livelihoods" and includes "education, training, and skills development" (UNESCO, 2016). According to (Naidu, Stanwick and Frazer, 2013), apprenticeship training (AT), vocational education (VE), technical education (TE), technical-vocational education (TVE), occupational education (OE), and professional and vocational education (PVE) are all words that are used interchangeably in the Asia Pacific area (VET). Numerous investigations have sought to assess students' motivation to choose TVET in a range of nation situations, and the literature on TVET education is extensive (Omar et al., 2020).

Besides, Through education policy research into technical and vocational education and training (TVET), a broad appreciation of the vocational components of technical education survives, but the fundamental sciences and art's importance in technical training is commonly overlooked in modern times (Pardy, 2020). Technical education was deemed "the biggest social concern" for the approaching century in late nineteenth-century Australia (Selleck, 1982), for training in relevant or practical skills, numerous models of skill acquisition have been proposed in TVET (Chukwuedo and Ogbuanya, 2020).

In addition, According to Jabarullah and Iqbal Hussain (2019), TVET includes both formal and casual learning which it equips students who are knowledgeable and abilities necessary to professional success; including technical-vocational education, technical education, occupational education, professional and vocational education, vocational education and training, career and technical education, workplace education, and workforce education, according to the United Nations Educational, Scientific, and Cultural Organization; The study of technology and related subjects, general education, and the development of attitudes, practical skills, knowledge and understanding, related to one's chosen career are all part of TVET, despite its many different names (Jabarullah and Iqbal Hussain, 2019).

According to Towey et al., (2019), Technical and vocational education and training (TVET) is defined as "education, training, and skills development relating

to a wide range of occupational fields, production, services, and livelihoods" (UNESCO, 2015) and is seen as an alternative education path for developing skilled technicians to meet a country's manpower requirements. The main goal of TVET is to generate work-ready graduates through cultivating pertinent skills and information and promoting instruction in essential real-world skills sets including communication, problem-solving, critical thinking, and lifelong learning (Jabarullah and Iqbal Hussain, 2019). Students who participate in TVET receive both official and informal training that provides them with the knowledge and abilities they need to succeed in the workplace (Jabarullah and Iqbal Hussain, 2019). As a result, technical and vocational education (TVE) is sometimes used indicate encompasses all facets of the education cycle, such as general education, technological study, supplementary science study, and also the development of specific attitude, skills, and knowledge which lead for employment in certain social sectors and economic, along with education in general (UNESCO-ILO, 2002).

2.2 HIGHER EDUCATION

Through providing a substitute for a full-time academics path to higher level certificates like Bachelor's and Master's degrees, higher education may be broadened to assist social mobility (Felce, 2019). After high school, higher education is the third degree of education. It includes both undergraduate and graduate courses and is frequently carried out at universities and further education institutions (Nidirect, 2021). Higher education can increase the career opportunities and income potential by letting you study a subject that interests you (Nidirect, 2021). Higher education institutions deliver accurate, accessible, and trustworthy information on the learning opportunities they give to their target audiences (QAA, 2011b). In the late 1990s, Malaysian higher education institutions began using technology learning (e-learning) (Hussin et al., 2009). Higher education institutions in Malaysia have begun to invest in information and communication technology (ICT) infrastructure in order to meet the demands of a heterogeneous group of students and the expansion of higher education (Devisakti and Muftahu, 2022).According to Hussin (2018), the benefits of investing in ICT

shifted the educational paradigm. Since the introduction of Education 4.0 with the Higher Education Blueprint 2015–2025, Malaysia have used mixed education in higher education (Adams et al., 2018).

Higher education are usually seen as a defined to a more prosperous existence. "The primary answer to the issue of 'who goes ahead' is 'those who are educated,'" according to widely held opinions in many countries. (Deng and Treiman, 1997). Nonetheless, since the late twentieth century, value of higher education as a medium of exchange for opportunities has become unstable due to the global an increase in higher education participation (Wright and Wei, 2020). More young people are unsure of the value of higher education (Cook et al., 2019). According to Marginson (2016), higher education systems have gotten increasingly stratified. Wright and Horta (2018) found that graduate job prospects have also become more unclear. A well-defined educational policy is essential to guaranteeing access, quality, and accountability for the public benefit of higher education (Hazelkorn and Gibson, 2019).

English medium at higher education are recognised in writing regarding new and current higher education formats as well as in literature about disparities in higher education (Bowl, 2003; Bhatti, 2003; Naidoo, 2004; Reay et al., 2005). Educational institutions in rising and densely populated countries like India and China are concentrating on upgrading social and living threads, playing a vital role in supporting government programmes and impacting the lives of a huge population in a variety of ways (Rana et al., 2022).Because of the increased divergence and stratification of higher education supply, structural inequalities enhance the educational system (Bowl, 2003; Bhatti, 2003; Naidoo, 2004; Reay et al., 2005).

2.3 POLICY

A government policy is a piece of legislation, a regulation, a process, an administrative decision, an incentive, or a voluntary practise. ((CDC), 2015). Usually, resources reflect policy choices while, various industry' policies could

have an effect on health ((CDC), 2015). Furthermore, an organisation adopts or creates policies as rules, principles, guides, other structures to achieve long-term goals (Safeopedia, 2017). These are frequently laid forth in an easily accessible textual manner (Safeopedia, 2017). Policies are developed to drive and influence all important choices made inside the business, as well as to maintain all actions within a set of recognised parameters (Safeopedia, 2017).

In addition, a policy is nothing more than a collection of regulations connected to a domain managed item (René Wies, 1996). A policy can be used to define or apply to a domain since the concepts of a policy and a domain are separate (René Wies, 1996). Policy is defined in Morris Sloman (1993) and Jonathan (1994) as the ability for influence the behaviour of such a manager or controlled items. That shall define policies as being generated from managerial objectives and defining the expected behaviour of dispersed applications, networks and heterogeneous systems (Ren´e Wies, 1994).

Furthermore, policy effectiveness reflects a key principle of modern policy sciences: problem-solving (Mukherjee and Bali, 2019). In other words, the primary purpose of Public policy is the deliberate process of addressing or resolving societal problems or improving policies outcomes (Peters et al. 2018). However, although policies design is mainly concerned with developing effective policies solutions, public policy are mainly concerned with resolving issues that achieve that goal (Howlett and Mukherjee, 2018). Then, both the creators and the implementers must possess the essential skill sets and skills in order to create effective policies (Mukherjee and Bali, 2019).

Besides, there are several sorts of policies, which are not often in writing (Klepac Pogrmilovic et al., 2019). Schmid et al. (2006) recognised this and Policy is characterised on three different levels: formal written laws, regulations, or judgments having legal force; written norms that affect decisions; plus unwritten social standards. Moreover, a policy is commonly defined as a guideline or norm that guides decisions and achieves a sensible result (Rahimi and Noruzi, 2011). Policy is very essential to us, and we should remember that policy causes multiple aims to be combined, and this integration leads to government success (Rahimi and Noruzi, 2011). Countries that do not engage in systematic policymaking

procedures will not achieve greater success (Rahimi and Noruzi, 2011). They have no idea where they want to go; policy is like a light bulb that illuminates the path the country want to take (Rahimi and Noruzi, 2011). Policy also assists the country in developing long-term plans (Rahimi and Noruzi, 2011). Although extremely long-term strategies are not conceivable now because of the quickening of environmental change, this does not exclude policymaking (Rahimi and Noruzi, 2011).

Following a period of decline in particular technical and vocational education and training are prevalent in Sub-Saharan Africa and South Asia (TVET) have reappeared to the global agendas among government and nongovernmental organizations between the 1990s and 2000s (King and Palmer, 2010). In low and middle income countries (LMICs), a lot of politicians and political communities are still drawn to the alleged correlation between TVET and decreased unemployment by giving them the necessary information and ability for react to employment prospects view, for illustration (African Union, 2007). In particular, in terms of social stability, economic prosperity, and poverty reduction, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) is among those highlighting the governmental importance increasingly associated with higher-order abilities and their core role while in world economy of information (UNESCO, 2010). The 2012 Global Monitoring Report on Education for All (EFA), that emphasises TVET and skill development as solutions for poor populations, reflects this change in emphasis (UNESCO, 2012).

TVET might have been an important investment area in developing nations, with numerous programmes in place to solve unemployment and enhance economic growth (Mee Young Choi, 2021). Nevertheless, it is crucial to highlight that TVET schools struggle with meeting the constantly shifting skill demands of the industry, which makes it vital to convey knowledge about needed abilities for potential graduates as many graduates seldom have the abilities required to thrive in the job (Nanda, 2010). As a result, firms confront difficulties in obtaining individuals that possess competent soft skills like problem-solving, communication, interpersonal abilities, and organisational (Sodipo, 2014; Atsumbe and Saba, 2008). Increasing the workforce of the twenty-first century

who are educated for a globalized, creative, and conceptual workplace is necessary to address the current skills gap (Mee Young Choi, 2021). Teachers in charge of teaching and educating future technical college graduates should reconsider their teaching approaches to fulfil the requirements of the knowledge-based economics of the twenty-first century (Mee Young Choi, 2021).

2.4 INDUSTRY DEMAND

Industry demand is an industry's overall aggregate demand for products (Team, 2021). In order to calculate market share, company demand is frequently stated as a percentage of industry demand products (Team, 2021). The term "industrial demand" refers to the overall aggregate demand for a certain industry's goods, such as cement demand in the building sector (Jargons, 2016). The aggregate demand for a certain industrial product is referred to as industrial demand (Nasrudin, 2019). Demand will rise owing to a growth in the number of new users or increased purchases by existing customers, and it also relates to market demand (Nasrudin, 2019). Industry demand encompasses demand from all enterprises in the industry, which includes items with various brand names and trademarks (Nasrudin, 2019). These goods are interchangeable (Nasrudin, 2019). By aggregating the individual demand functions for each business, the industry demand function can be calculated (Das, 2022).

Technical Vocational Education and Training (TVET) are the key reason in the transformation of Malaysia's educational system and a contributor to economic prosperity (Yeap, Suhaimi, and Nasir, 2021). It seeks to develop and equip individuals with current technological skills that are in demand in the business (Yeap, Suhaimi, and Nasir, 2021). In order to produce skilled manpower that satisfies industry demand and promotes that transition of any and all economic sectors to knowledge-intensive activity in line with the aim of becoming a high-income nation by 2020, TVET must be transformed by permitting an industry-led approach (Khirotdin et al., 2019).

To enhance student enrolment in TVET education, teachers should improve their teaching quality through training and industry attachment programmes (Aziz et al., 2020). Yusof et al. (2020) also indicated in their study that teachers who teach technology courses must have industry expertise and information in order to stay current with industry needs. Exposure to industry demand can help educators close the capability gap (Kamaruddin and Ibrahim, 2010).

Beside, Technical vocational education and training (TVET) is an essential component in many developing nations' initiatives to minimise young unemployment (Towip et al., 2021). One of the causes of young unemployment is a skills mismatch between graduates and industry demands (René Lenssen, 2020). Skills shortages become a barrier to economic progress (Towip et al., 2021). The skills gap between industry need and supply is widening (Holzer, 2015). In reality, the skills gap is the product of existing TVET that is incapable of meeting many difficulties posed by quickly changing industrial employment requirements (Towip et al., 2021). A regional or national labour market's lack of adequate skills for industrial demand is significantly exacerbated by ineffective TVET administration (Remington, 2018).

2.5 DECENT JOBS

In general, a decent job is employment that is done of one's own free will, pays or gives adequate income to support a decent and dignified existence, and offers physical and psychological security and safety. Decent job is critical to establishing a high-quality education workforce (International Labour Organization, 2021). Individual growth and well-being are dependent on decent job (Atitsogbe et al., 2020). The notion of decent job was developed during the 87th International Labour Conference in 1999, and the International Labour Organization declared it a top goal (International Labour Organization (ILO), 1999). In the report of the ILO Director-General, Work that is based also on four components of standard rights, job and earnings, social welfare, and social inclusion is referred to as a "decent work" (International Labour Organization (ILO), 1999).

Beside, according to International Labour Organization (2021), decent job is defined as "productive work for women and men in conditions of equality, security, and human dignity." Improved prospects to economic development and career integration, allowing people to communicate their own concerns, organising and participating choices that have an impact, ensuring equal opportunities and care for all are all part of this concept; it also refers to employment opportunities that are productive and pay a fair wage (International Labour Organization, 2021). Following that, access to "decent job" for everyone became one of the United Nations' Sustainable Development Goals, emphasising the significance of families, individuals, and communities to long-term development (Di Fabio, 2017; United Nations, 2020).

According to this perspective, having a decent job is the main factor in determining work fulfilment work meaning and job satisfaction and wellness because it satisfies 3 sets of fundamental human requires such as first are survival, which includes necessities like shelter, food, and healthcare; second are social connections or contributions, that reflect the required for engage with and give back to the society at large; and third are self-determination, which includes the requirement that human actions be in line with genuine, meaningful goals (Duffy et al., 2016). However, due to the fact that good work is a job attribute, it has the ability to modify the link between work engagement and predictors such as job resources, job demands, and personal resources (Lee, Song and Kim, 2021).

Furthermore, decent job is described as "enough remuneration, interpersonal safety and acceptable working circumstances, access to health-care facilities, free time and rest, and a suitable match between an organisation and family/societal values," according to Duffy et al., (2016). While these meanings support the concept of decent job, various additional studies have shown the importance of "decent job" in enhancing people's personal and professional life (Kozan et al., 2019). A "decent job" is seen as a basic sign of an organization's junction of human resource development and corporate social responsibility (Jang and Ardichvili, 2020). Unequivocally that there was a paucity of empirical information on the human resource development and corporate social responsibility interaction as it expanded beyond functional components (Jang and Ardichvili, 2020). As a result,

including "decent job" within human resource development studies is an issue of fundamental principles that may aid in achieving the common good (Kuchinke, 2010; Li, 2020).

2.6 SKILL DEVELOPMENT

The majority of TVET students are first-line high-quality skilled talents in a variety of vocations, because they are aware with labour market demand and industry demands, TVET teaching personnel can best support students' skill development (Liu et al., 2020). Vocational skills may assist students in producing quality, competitive commodities with more efficiency, and are thus essential for poverty reduction and Sustainable Development (Liu et al., 2020).

Skills development policy is guided by the principles of lifelong learning and creates opportunities for all groups without any discrimination. Proactive skill development is the self-directed, future-oriented, and change-oriented learning of information and abilities that individuals may require to accomplish future work duties (Claes and Quintanilla, 1998). Every organisation needs skill development becoming a manager solution to supplement individual instruction and boost the efficiency of some of the most valuable resources (the workers) (Mopeli, 2014). In the context of globalisation, skill development is critical to handle the possibilities and difficulties of changing economies and new technology (International Labour Organization (ILO), 2020). Skill development is the process of detecting and addressing skill deficiencies (Eline, 2021). Improve human beings' capacity to do a job-related action that leads to the effective completion of a task. It might be a type of intimacy in which knowledge is gained via precise and repetitive practise (Chale, 2021).

As a result, industry involvement has always been essential for developing and implementing training and skill development (Mohammad Hussain et al., 2021). An examination of Malaysia's three primary strategies (2010-2021) based on industrial experience and cooperation metrics reveals that the nation has

significantly benefited from the cooperation between industry and TVET (Mohammad Hussain et al., 2021).

2.6.1 Employability Skill

Employability skills are Described as the talent need for get and retain a job, that phrase's more modern interpretation refers to the training or fundamental abilities that one needs develop in order to find and keep a job, particular competencies (Kenayathulla, Ahmad and Idris, 2019). Employability abilities are those necessary for obtaining, retaining, and doing successfully on the employment (Shafie and Nayan, 2010). Employability skills are a set of abilities that aid in an individual's ability to function well in the job (Kenayathulla, Ahmad and Idris, 2019). Employability abilities were characterised by Overtoom (2000) as "transferable core skill groupings that constitute fundamental functional and enabling knowledge, skills, and attitudes necessary to perform effectively on the work in the twenty-first century."

In addition, employability as defined "a collection of accomplishments - skills, understandings, and personal characteristics that make graduates more likely to acquire employment and succeed in their chosen vocations, benefiting themselves, the workforce, the community, and the economy" (Yorke and Knight, 2004). These are the employability skills that required to increase a worker's efficacy and job abilities across all vocations (Bakar, Mohamed and Hanafi, 2007). All employees are required to be able to adjust to shifting job requirements, workplace dynamics, and challenges by possessing employability skills (Bakar, Mohamed and Hanafi, 2007). The amount of education and skills necessary evolved as the type and geography of occupations changed (Bakar, Mohamed and Hanafi, 2007). As a result, employers have a significant problem in a world of intense competition, the modern economy required new approaches, and functioning (Bakar, Mohamed and Hanafi, 2007).

According to Hillage and Pollard (1998), the phrase "employability" is notoriously difficult to define. (Dacre Pool and Sewell, 2007; Leitch, 2006;

HEFCE Enhancing Student Employability Co-ordination Team (ESECT), 2002; Knight and Yorke, 2001) There are several definitions of employability. The skills needed to land, keep, and succeed in a job are known as employability skills (Stephen and Festus, 2022). Employability skills are transferable talents that may be used in practically any job. They must gain skills, knowledge, or ideas that make employees more appealing to employers (Soundararajan, 2022). Employability abilities are described using terms such as job skills, soft skills, work ready skills, and fundamental skills (Soundararajan, 2022). Employee performance is frequently enhanced, mistakes are decreased, and teamwork with co-workers motivates them to do their duties more successfully (Soundararajan, 2022).

According to the study, Malaysia places a greater the following competencies are suggested as part of a transformation for employability skill concepts: teamwork, communications, self-management, problem-solving, technical, planning and organisation, learning, and entrepreneurial competencies. (Kamaliah et al. 2018). Finally, employability is critical in a knowledge-based economy students (Bakar, Mohamed and Hanafi, 2007). Thus, increasing students' employability is a serious obligation that requires the attention of both faculty and students (Bakar, Mohamed and Hanafi, 2007).

2.6.1.1 Communication

In general, communication refers to the process of two or more individuals exchanging information, ideas, feelings, and thoughts and it can occasionally involve enormous groups. In today's work climate, communication is the most vital interpersonal ability (Robles, 2012). According to Houston and Lumsden (2011), the employee chooses leaders who have excellent communication abilities. Shakir (2009) argues that in order for students to create industry-specific business reports and letter, the higher education curriculum must focus on communication skills and help students become more fluent in both English and Chinese. Murillo-Zamorano and Montanero (2017) affirmed that one of the most significant general abilities that students should master before graduation is clear speech communication in public. Furthermore, improving communication skills is

required for students to produce new ideas and future work opportunities (Kwok, 2005; Oliver et al., 2011).

Communication skills are separated into two groups such as language skills and professional communication abilities (Al Riyami, 2021). Linguistic abilities are further classified as productive and receptive (Bhatt and Lilian, 2016). A user is someone who receptive skills listens or reads to the language and then decodes its meaning (Al Riyami, 2021). When a person employs productive talents, he or she employs language in a meaningful way to generate writing and speaking (Al Riyami, 2021). Numerous studies have identified several professional communication skills that graduates must acquire before beginning employment (Al Riyami, 2021). Speaking clearly, expressing ideas forcefully and persuasively, listening intently and posing questions, and giving clear directions are all examples of communication abilities (Yusoff et al., 2012; Oussii and Klibi, 2017). Humanistic communication is defined in technical communication literature as a type of communication that promotes humanistic ideals such as discussion, listening, and ethical concerns in order to establish an understanding amongst communication partners (Elshof amd Hendrawan, 2022). Another key part of humanistic communication is "understanding the impact of the environment on content reception and delivery" (Ranade and Swarts, 2019).

Communication abilities are essential (Nowell et al., 2021). Understanding and successfully communicating were considered as critical professional abilities for postdoctoral growth (Nowell et al., 2021). Postdocs must master a variety of communication forms in order to facilitate knowledge mobilisation, which is the process of making research data understandable to a wide range of audiences (e.g. textual, face-to-face, visual media and interactive technologies) (Nowell et al., 2021).

In addition, giving and receiving messages through written and graphical representations (including charts, infographics and maps), voice or oral communication, signs, signals, and behaviour are known as a communication. Communication is defined as "the creation and interchange of meaning" (Nordquist, 2021). James Carey, a media critic and theorist, said in his 1992 book "Communication as Culture" that communication is "a symbolic process by which

reality is formed, perpetuated, healed, and modified," contending it through exchanging their experiences with each other, and shape their reality (Nordquist, 2021). Every living thing on Earth has developed ways to express its emotions and thoughts to one another (Nordquist, 2021). But what sets humans apart from other species is their capacity to use language and words to transmit clear meanings (Nordquist, 2021).

2.6.1.2 Problem Solving

A TVET qualification provided someone or a graduate with specific workplace abilities (Zainaf, Robiah and Habibah, 2019). Problems must be solved more quickly, accurately, effectively, and efficiently (Zainaf, Robiah and Habibah, 2019). As a result, the TVET curriculum encourages skills such as problem solving, STEM fields include science, technology, engineering, and math, as well as the Four 4Cs: communication, cooperation, creativity critical and thinking (Reeve 2016). Problem solving skills were one of the employability qualities that employers valued the most (Zainaf, Robiah and Habibah, 2019).

However, according to several observations made in TVET institutions and responses from industry, lack of problem-solving skills is one of the reasons why graduates and students do not satisfy the requirements to be potential employees. (Seman, Rahman, & Ahmad, 2014). This is also corroborated by Chiang and Lee (2016), who stated that pupils struggled with problem solving abilities and hence were unable to generate or finish a work assigned to them (Chiang and Lee, 2016).

Problem-solving abilities should also be included in the TVET curriculum, as they are frequently cited as one of the "best practises" by most employees (Adams, 2014 and PBLWorks, 2010). Workers nowadays need to be capable of problem-solving and analytical thinking, organisation, time management and decision-making, and communication risk-taking if they want to find job (Kenayathulla, Ahmad and Idris, 2019).

The process of addressing any kind of difficulty is called problem-solving (Instagantt, 2022). There are several stages to this approach (Instagantt, 2022).

These stages start with locating the issue and learning where it came from (Instagantt, 2022). After determining the issue and its origin, the next step is to find and implement potential solutions (Instagantt, 2022). The process of addressing any kind of difficulty is called problem-solving (Instagantt, 2022).

Problem-solving abilities are essential for employees in industrial industries (Wan Mohamed and Omar, 2010). Issue solving is the process of analysing a problem and addressing it in the best way feasible given the circumstances (Toolshero, 2022). This process includes analysing the problem (root cause analysis), developing countermeasures, and applying the best solution for the scenario (Toolshero, 2022).

2.6.1.3 Time Management

Time management is essential for general satisfaction, in essence (Islam et al., 2021). According to Macan et al. (1990), those with greater time management behaviour ratings had better overall performance, less somatic stress, and less job and life uncertainty. In addition, the author identified four characteristics of time management behaviour: goal setting and prioritisation, mechanics (such as scheduling and planning), perceived control over time, and a desire for disorganisation (Islam et al., 2021). If you want to be successful in the textile sector, you must have excellent time management skills (Islam et al., 2021).

Sarfraz (2017) disproves the notion that time management skills are the same for transactional, transformational, and other types of leaders. According to earlier studies, developing time management skills including the ability to prioritise tasks, establish appropriate goals, maintain organisation, and monitor one's own progress (Claessens et al., 2007). Konig and Kleinmann (2005) found that as deadlines draw near, participants are most motivated to complete the tasks at hand. Time discounting, which goes by this name, is the main cause of deadline rush (Islam et al., 2021). Afsaneh et al. (2019) investigated the connection between self-efficacy and time management skills.

Furthermore, several indicators were used to manage time (Sari, Ilhamdaniah and Megayanti, 2021). Planning, organising, mobilising, and managing time productivity are examples of time management initiatives (Adam, 2020). Time management is also essential in achieving organisational goals, as it is necessary to organise, manage, lead, and control both people and resources (Sari, Ilhamdaniah and Megayanti, 2021).

Additionally, time management are coordination of activities and duties to maximise the effect of a person's efforts (Wigmore, 2015). To assist individuals for perform greater output in less time is the aim of time management (Wigmore, 2015). The components include organising, planning, and scheduling to maximise the utilisation of the person's time while also taking into account their unique circumstances and important traits (Wigmore, 2015). Planning ahead and exercising deliberate control over the amount of time spent on certain tasks with the intention of boosting effectiveness, efficiency, and output (Stella Cottrell, 2013). It requires juggling a person's numerous obligations from work, social life, family, hobbies, and other pursuits with the passing of time (Stella Cottrell, 2013). When time is managed well, a person may spend their money or complete chores at their own leisure and convenience (Stella Cottrell, 2013).

2.6.1.4 Technology Use

When technology usage is the main variable of interest, researchers may think of completely giving up on latent measures because "usage" is so obvious (Ellis, 2020). According to Muda and Landau (2019), the use of technology have a favourable and substantial impact on the effectiveness of accounting and auditing activities. Workplace technology use may therefore effect on or enhance ergonomics (Kadir et al., 2019; Clegg, 2000), as well as psychological elements of occupations (Demerouti, 2020; Cascio and Montealgre, 2016). Person-related factors, in addition to task-related conditions, are likely to limit or spur technology adoption for individuals with the same employment. Individual choices to utilise or not use technology drive the latter (Davis, 1989; Venkatesh et al., 2003; Williams et al., 2015).

Technology is utilised to help with the teaching process, but it is also an important instrument in teaching and learning (Yunus and Mohamad, 2022). Innovative technology solutions may accustomed for lower cost, increase accessibility, and enhance the standard of experience for work-based learners. These solutions include online theory-based course delivery through e-apprenticeship models, as well as digital learning tracking systems (Asha Kanwar, 2019)

Beside, open and adaptable frameworks must be linked with the use of technology to achieve lifelong learning in TVET (Asha Kanwar, 2019). Utilizing technology within the same constrained pedagogical paradigms that are already in use won't increase access to the constant skill development and retraining needed promotes both the advancement of the labour market and the overall well-being of individuals such as democracy and social harmony (Asha Kanwar, 2019).

In addition, because of the fast advancement of technology, TVET lecturers confront a number of obstacles, particularly in incorporating technology into their teaching and learning (Yunus and Mohamad, 2022). TVET instructors understand the need of staying current on technology advancements in learning and teaching (Koehler et al., 2013; Mahat et al., 2019; Okundaye, 2017).

Meanwhile, some instructors continue to employ conventional teaching and learning techniques despite a national education system that aggressively increases technological education (Mahat et al., 2019). It is now necessary to consider the use of technology in education for both teaching and learning (Yunus and Mohamad, 2022). Education, how children learn, and interactions between teachers and students are all significantly impacted by technology (Cox and Prestridge, 2020; Hwang and Tsai, 2011). Numerous distant learning programmes and the internet, which are accessible to both professors and students, have also contributed in the advancement of education (Pooja, 2021; Stošić, 2015).

2.6.2 Entrepreneurship

The entrepreneurial phenomena of intrapreneurship serves as an essential sounding board for entrepreneurship definitions (Prince, Chapman and Cassey, 2021). In the early 20th century, businesspeople regularly mistaken for managers and were largely seen from a financial standpoint (Ely and Hess, 1937). The notion has expanded to incorporate newness, creation, organisation, risk taking, and wealth as a result of the combination of business, managerial, and personal terminologies (Ronstadt, 1984). We base this article's definition on the following to encompass all forms of entrepreneurial behaviour: "Entrepreneurship is the process of creating something new with value by devoting the necessary time and effort, assuming the associated financial, psychic, and social risks, and receiving the resulting rewards" (Hisrich, Peters, and Shepherd, 2005).

Entrepreneurship is the act of taking risks in order to make investments while maintaining control over all resources that might generate revenues. A conceptual debate may arise when defining entrepreneurship since a very limited definition may not fully include the subject, while a very broad definition may reduce the usefulness of entrepreneurship as a distinct subject of research by equating it with management (Stevenson and Jarillo, 2007). According Shrivastava and Acharya (2021), a strategy whereby a person or group from a disadvantaged background finds a lucrative opportunity and takes advantage of it using their entrepreneurial skills, creativity, and differentiation with the resources they have access to, changing the market and society at large by fostering an ecosystem of job creators. Entrepreneurship is a verb, according to the definition provided, that is entrepreneurship is defined here as a multi-faceted activity encompassing a wide range of behaviours, connecting the proposed definition with the field's trajectory, this definition also implies that being labelled an entrepreneur requires engagement (Prince, Chapman and Cassey, 2021).

2.6.2.1 Networking skills

Networking is the ability to share information and ideas with people and organisations that share your interests (Harappa, 2021). For mutual benefit, you develop enduring relationships with others (Harappa, 2021). Networking skills are the traits or talents needed to maintain interpersonal connections (Harappa, 2021). They assist in making touch and creating a conduit for two-way communication (Harappa, 2021). Aside from skill development, networking should become a habit because it may expedite your professional development and career (Harappa, 2021). Beside, according to the website University of Cambridge Judge Business School (2022), One of the most important skills for businesses is networking that you can practise on programmes like Enterprise Tuesday (Enterprise Tuesday is a series of evening talks and panel discussions with tech pioneers, business leaders and experienced entrepreneurs). Networking entails making and sustaining connections and interactions with others (University of Cambridge Judge Business School, 2022). The significance of 'networking abilities' is becoming recognised, with the gathering of possible investors and entrepreneurs becoming more regular, the ability to describe the business opportunity in little amount of time has become critical in a competitive market situation (Edmondson, 2020). Regardless of the situation, many potential investors want entrepreneurs to be able to present their elevator pitches in a concise and focused manner (Edmondson, 2020).

The skills necessary for maintaining social or professional contacts are known as networking skills (Team, 2022). The ability to network is crucial in a range of industries, including sales, business development, and others (Team, 2022). Establishing and maintaining connections with new contacts and promoting something of worth both need networking skills (Team, 2022). In entrepreneurship, networking refers to the creation and maintenance of social ties that can assist firms in meeting their needs (Ghalumyan, 2020). Nowadays, one of the most crucial things for businesses to consider is how to develop their networks. Furthermore, it has been claimed that who you know in business is everything (Ghalumyan, 2020). The capacity to develop good, beneficial relationships is defined as networking skill (Ferris et al., 2005). If someone has this talent, the ties they form should be constructive rather than destructive (Seitz and Misra, 2020). As a result, networking expertise will lead to fewer inbound unfavourable

partnerships; yet, the ability to forge negative ties runs counter to the anticipated results (Seitz and Misra, 2020).

Furthermore, Claudia and Brock Smith (2021) defines networking are "the process of generating, building, and maintaining a network of advantageous relationships with others," whereas Jarillo (1989, p. 133) defines it as "a mechanism through which entrepreneurs may access external resources by using all personal ties." Networking amongst several stakeholders have just as a lot, if not more, of an effect on the process of developing new ventures as technology does. Technology allows collaborations and cooperation in the processes of product customization, design input, and crowdsourcing (Wiberg and Nyberg, 2012). Networking skills influence actions in a manner similar to that seen in the situations approach, and in a context of hierarchical stagnation, networking abilities are more likely to be activated (Ference et al., 1977). People with good networking abilities view their connections and relationships as useful tools for navigating the company and achieving career success (Perrewé et al., 2000). Networking talent is the abilities for create and employ several of personal networks to assure the success of people and businesses with large financial resources (Amah, 2021). The capacity to look exceedingly honest and sincere is referred to as apparent sincerity (Amah, 2021).

Besides, using web sites networking is a critical skill that includes personal communication, relationship management, and professionalism, and it might entail approaching or reaching out to persons or organisations that can help in professional life, according to the University of Manchester (2021). After establishing a relationship, this talent may imply developing or strengthening that connection through time (The University of Manchester, 2021). Employers appreciate networking as a talent since it is essential for sustaining positive workplace connections, whether amongst co-workers, partners, or clients, even before starting a job, networking will assist you obtain information and steer your career (The University of Manchester, 2021).

2.6.2.2 Critical Thinking Skills

According to the website Washington State University (2020), critical thinking are associated to issue solving, but it goes beyond that. Entrepreneurs, as critical thinkers, do more than only solve issues. They are the finest at problem solving. Critical thinkers generate several alternative answers to a problem and weigh them all before settling on the best one (Washington State University, 2020). Here to highest standard possible, anyone can make rational and informed judgments by using critical thinking (Will Erstad, 2018). The capacity to interpret information rationally and reach a reasonable conclusion is referred to as critical thinking (Doyle, 2022). It entails analysing information from sources including facts, information, observable occurrences, and study results (Doyle, 2022). Critical thinking is a talent that may be improved and developed via practise, real-life experiences, and the passage of time (Surapaneni, 2019). Whether you are born with this gift or not, you may develop your own critical thinking skills with the correct application (Surapaneni, 2019).

Critical thinking is defined as deliberate, self-regulatory judgement that results in analysis, interpretation, assessment, and inference, but also a description of the supporting philosophical, methodological, evidential, criteriological, or contextual components (Facione, 1989). The use of critical thinking in research is crucial (Facione, 1989). Therefore, critical thinking is an empowering force in education and a useful tool in both personal and public life (Facione, 1989). Although critical thinking is not the same as brilliant thinking, it is a common and self-correcting human phenomenon (Facione, 1989). The perfect critical thinker has always been curious, knowledgeable, confident in their own judgement, adaptable, open-minded, and fair-minded in their assessments, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results that are as precise as the subject and the subject and the subject and the subject and the subject and the subject and the subject and (Facione, 1989). Thus, developing competent critical thinkers entails striving towards this goal (Facione, 1989). It combines the development of Critical thinking abilities with the cultivation of attitudes that

consistently provide helpful insights and serve as the foundation of a rational and democratic society (Facione, 1989).

2.6.2.3 Creative Thinking Skills

Aside from Malaysia, this issue affects other nations such as South Africa, since studies have shown that college students need to develop their creative thinking skills, which are levels of thinking beyond those often used in schools (Moodley, 2013). Creative thinking, or the sub-experience theory's, discusses the impact of previous encounters on the performance of logical exercises (Sternberg, 2018). People use their creative thinking skills for find the best answers to problems that arise frequently (Martz, Hughes and Braun, 2017; Sternberg, 2018). Dynamic creative ideas can develop and fulfil a variety of purposes (Azid and Ruzlan, 2020).

Furthermore, thinking abilities are essential in the profession because they assist to synthesise knowledge and think holistically, incorporate environmental and social principles into work, and find new methods to address challenges (Boer, 2014). Thus, enhancing thinking capacity are the one of the primary objective of education, and schools are regarded as venues where thinking abilities may be improved (Tze Kiong et al., 2019).

A thinking process is one that includes conceiving, applying, analysing, synthesising, or evaluating knowledge that has been learned or developed by experience, observation, reflection, proclivity, or communication (Idris et al., 2009). Since then, it has come to be recognised as the key to encouraging students' creative educational progress (Chew and Nadaraja, 2014).

In order to prepare students for future needs, notably in employability skills, the Malaysian Ministry of Education devised the Thinking Skills Model, which has been used since 1994 and places a focus on critical and problem-solving and creative thinking (Tze Kiong et al., 2019). According to Roy (2012), thinking skills are so vital that they should not be overlooked in the curriculum.

A skill that enables you to perceive things from several angles and perspectives is creative thinking (Tomaszewski, 2022). It's a creative thought process that yields unexpected results and novel approaches to problems (Tomaszewski, 2022). Ideas for creative thinking can be generated through brainstorming or lateral thinking (Tomaszewski, 2022). Creative thinking is the process of generating original answers to problems using one's abilities and soft skills (Rock Content Writer, 2020). Innovative thinking methods involve looking at a problem from several, original angles while using the proper tools to evaluate it and develop a plan of action (Rock Content Writer, 2020).

2.6.2.4 Customer Service Skills

Using customer service techniques are crucial for modern businesses since it has evolved into an important component of the marketing mix and a crucial component of the marketing plan (Amjad et al., 2011). Customer satisfaction rates are declining for many businesses despite substantial expenditure in the area of customer service (Karimi et al., 2001). Critical practical problems like financial success, nonverbal and vocal communication, and customer service tactics, and well-informed client care staff are typically not addressed by effective and efficient customer service (Amjad et al., 2011).

Customer service is the ability of a company to carry out the procedures and tasks necessary to allow clients to contact the relevant individuals inside the business, receive timely and competent service, and have their issues handled successfully (Kotler, 2000). When it comes to customer service, we mean "individual workers' behavioural competencies necessary to offer high-quality customer service" in connection with Kotler's (2000) concept of customer service and the work of others (Marr, 1994; Christopher, 1999; Baker, 2000; Lovelock, 2001).

Industry analysts claim that social skills are crucial for TVET graduates (Halik Bassah, 2022). According to experts, inadequate social skills led to subpar customer service (Halik Bassah, 2022). This supports the research of Krishnan et

al. (2019), who found that graduates' lack communication abilities effect the calibre of their customer service. Good social and public relations skills are crucial when interacting with customers and will be advantageous to the organisation (Halik Bassah, 2022). The experts suggested that TVET graduates' competency assessments be enhanced in order to give a more complete picture of their genuine capabilities (Halik Bassah, 2022).

Among the customer service abilities are the interact with people, solve issues, be patient and knowing, ensure the client happiness, and handle customer concerns (Streiff, 2022). Employees that succeed at customer service may have a significant impact on a company's bottom line (Streiff, 2022). Companies employ customer service professionals to answer customers' concerns, resolve technological issues, and collect money (Suttle, 2017). Depending on the sort of company setting in which they operate, the representatives frequently take queries or address issues over the phone or in person (Suttle, 2017). To represent their firm, handle difficulties, and execute their work, customer service professionals must have particular talents, such as professionalism, effective communication, effectiveness in use existing resources, and problem-solving ability (Suttle, 2017). Beside, Reference Cronin and Taylor (1992), underlined that consumer perception of service quality can predict customer satisfaction. Service quality is important in defining a company's image, customer happiness, and loyalty (Hassan and Farid Shamsudin, 2019).

Furthermore, customer service skills are the traits, skills and techniques used to help customers in resolve problems and ensuring an amazing experience (Glassdoor, 2021). Customer service representatives rely on their capacity for collaboration and solution to ensure customer happiness and to help consumers in locating products and matching services for their requirements (Glassdoor, 2021). Quality customer care necessitates a set of specific abilities like as patience, critical thinking, product and brand understanding, adaptability, and the capacity to confront difficulties with optimism and inventiveness (Glassdoor, 2021).

2.7 RESEARCH FRAMEWORK

According to Adom, et al. (2018), research without the theoretical framework makes difficult for researcher underlying hypothesis in this study. The theoretical framework is utilized efficiently in the research expedition.

The theoretical framework given in Figure 2.1 is assessing industry needs among technical and vocational education and training (TVET) higher education: the case study. Developing a framework in this study based on the research objective and research question. Industry needs among TVET higher education are the dependent variables in this study while (TVET) higher education which are TVET, higher education, policy, industry demand, decent jobs and skill development are stated of independent variables. The framework will illustrate related of dependent variables and each of the independent variables.

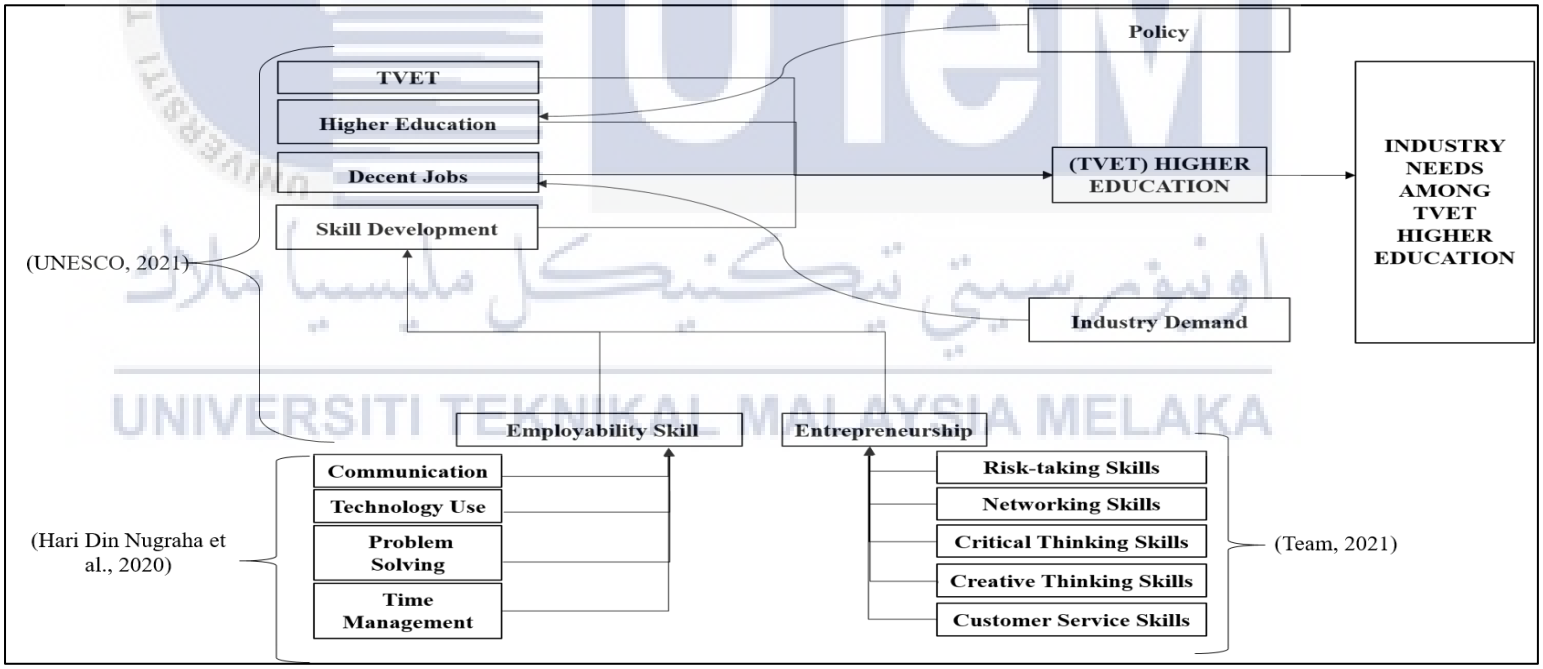

Figure 2.1 Research Framework

2.8 SUMMARY

In conclusion, with literature reviews and theoretical models, this chapter elaborates and provides elements related to the industry needs among TVET higher education. The independent variables set in this study is (TVET) higher education which are TVET, higher education, policy, industry demand, decent jobs and skill development, while the dependent variable is industry needs among TVET higher education . The elements of the independent variable are choosing based on the secondary method and this variable seems as important that concerned by most of the consumer.

The researcher gathered and collected the information for research topic based on reliable academic writing such as journals, books, website, article, thesis and other published materials. The hypothesis was constructed using the theoretical framework which consists of theory and concept of the research topic.

CHAPTER 3

METHODOLOGY

3.0 INTRODUCTION

The study technique that was utilised to link TVET higher education to industry demands was thoroughly detailed in this chapter. Research technique, according to Ahamat and Chong (2015), is a component that aids any researcher in systematically structuring the study to respond to research questions and achieve research objectives. In order to truly understand social reality, research, according to Della Porta (2014), are the coordinated human activities that allow for the objective observation of social reality. The exploratory study was selected as the research method for this research because it is practical for asking open-ended questions to learn what is occurring and what is gained understanding of the relevant topic (Saunders et al, 2012).

3.1 RESEARCH DESIGN

Research objectives and questions are established at the start of the study. A research design, according to Regoniel (2015), is a road map that helps the researcher carry out the study by responding to the research question or testing the research hypothesis. The purpose of a study design, according to Sileyew (2019), is to offer a suitable framework for the investigation. Using empirical data to

address your research question is a strategy known as a research design (McCombes, 2021).

The research design's objective is to develop a suitable framework for a research (Jilcha, 2019). The choice of research methodology is a crucial decision as it dictates how to proceed with the study design how pertinent a study's data will be collected; nonetheless, the research design process entails multiple interrelated considerations (Aaker, Kumar and George, 2000). The researcher must develop a research design after establishing the study subject, which involves outlining the conceptual framework within which the research will be conducted (Mimansha et al., 2019).

Study designs are the techniques and procedures utilised in a research project to collect and analyse data (Abbas, 2021). Design is the deliberate "setting up of conditions for analysis and data collection in a manner that attempts to blend relevance to the research aim with procedural efficiency," according to the Oxford Dictionary (Selltiz, Wrightsman and Cook, 1981).

A research study's design is a framework or group of techniques used to collect and analyse data on variables listed in a particular research challenge (Ranganathan and Aggarwal, 2018). There are several types of research study designs, and each has advantages and disadvantages of its own (Ranganathan and Aggarwal, 2018). The type of study design used to address the research topic depends on the nature of the question, the goal of the study, and the resources that are available (Ranganathan and Aggarwal, 2018). Understanding the various study designs, as well as their benefits and drawbacks, is crucial since the design of a research study may affect the validity of its results (Ranganathan and Aggarwal, 2018).

Therefore, there are two sorts of research designs such as qualitative research and quantitative research. The researcher uses the qualitative research approach in this research. This study examines the contributing variables in the circuit of technical and vocational education and training (TVET) in higher education in Malaysia, as well as the characteristics of industrial needs.

3.2 RESEARCH METHODOLOGY

The technique of data gathering or collection is planned in the data collection design (Mimansha et al., 2019). It is also described as the study of approaches for learning (Lehmann, 2010). Data gathering are the methodical process of compiling and examining data on relevant factors to address particular research questions, test hypotheses, and assess results (Kabir, 2016).

There are two different types of procedures for gathering data, such as secondary approaches (information that has previously been published in publications such as books, newspapers, periodicals, journals, and web portals) and primary data collection techniques are the two categories of data collecting methods. Primary data collection techniques that will be classified into two groups such as quantitative and qualitative (Dudovskiy, 2022). Then, data are classified into two major categories: qualitative (which includes focus groups, group discussions, and interviews) and quantitative (which is numerical in form and may be mathematically computed) (Kabir, 2016).

The researcher employed a qualitative research methodology for this investigation. According to Monette et al. (2010), qualitative techniques are responsible for the recognition of abstraction and generalisation. Vision, visuals, forms, and structures in various media, as well as spoken and written words, recorded sound, and other techniques of qualitative data collection are all categorised by Polonsky and Waller (2011). When developing theories using qualitative methods, the relationship between emergent theories, empirical research, and the research method is frequently illustrated (Glaser et al., 1968; Glaser, 1978; Strauss and Corbin, 1998; Van Maanen et al., 2007; Kaufmann and Denk, 2011). Qualitative approaches are a great means of recording participants' actual experiences in their native environment as teachers' evaluators and school leaders (Patton, 2002). Qualitative research is defined as this research, as the name implies, is focused with the qualitative process, it typically deals with the study of human behaviour (Mimansha et al., 2019).

Popular methods for collecting qualitative data techniques include action research, focus groups, observation, and interviews in business studies (Dudovskiy, 2022). To guarantee a better depth of understanding, qualitative data

collection techniques such as interviews, open-ended questionnaires, focus groups, observation, games or role-playing, case studies, and other methods are utilised (Dudovskiy, 2022). It has been argued that qualitative researchers misuse focus groups and interview at the expense of alternative approaches including case studies, conversational analysis, documentary analysis, observation, ethnography (Anderson, 2010). Therefore, the method of qualitative interview data collection that will be used in this case study.

The research methodology will be interpretivism. Interpretivism prioritises qualitative research approaches that emphasise the views, motivations, and reasoning of persons over quantitative data in order to comprehend social interactions (Nickerson, 2022). The study will be directed by the three created research questions and will employ an inductive methodology. Inductive reasoning is a method of deducing generalisations from particular instances (Bhandari, 2022). In addition, data will be collected through semi-structured interviews with four participants from industries in Melaka with a higher level of TVET education. To obtain more reliable data, the study will employ purposive sampling for selecting interview applicants. In addition, due to considerable time restrictions, this research will utilise a cross-sectional design.

3.3 RESEARCH PHILOSOPHY

A research philosophy is a guide for conducting research based on assumptions about the nature of reality and knowledge (Collis and Hussey, 2014, p.43). This study will adhere to the interpretivism ideology. Consequently, the data obtained for this study through interviews will be processed and analysed in order to determine the industry requirements for higher education in TVET. Even if the data collected is subjective, it could be used for further investigation. Interpretivism seeks to determine the meaning and motivations underlying why a person behaves or interacts with others in a particular manner within a given community or culture (Chowdhury, 2014). The purpose of this research is to draw more accurate findings than secondary data available online.

3.4 RESEARCH APPROACH

The study will employ a qualitative exploratory methodology. Using this method, the researcher can acquire a more comprehensive understanding of the topic under study (Zukauskas, Vveinhardt and Andriukaitienė, 2018). In this method, the researcher can receive valuable knowledge about the research topic and establish the information's reliability (Zukauskas, Vveinhardt and Andriukaitienė, 2018). The research methodology is a plan and procedure that ranges from general assumptions to specific data collecting, analysis, and interpretation techniques (Chetty, 2016). This study will employ the inductive research approach, as it is seen more appropriate given that the researcher will be able to construct a genuine theory pertinent to the investigation (Woiceshyn and Daellenbach, 2018). Inductive research is an inquiry that begins with the observation of an issue or situation in order to generate and test hypotheses about it (Team, 2021).

3.5 RESEARCH STRATEGY

The researcher will conduct the investigation through a qualitative survey. This strategy of conducting interviews for market research is extremely prevalent. In this study, the researcher employed the most popular approach of data gathering, semi-structured questionnaires. Interviewers must possess a variety of skills, such as the ability to communicate with others, listen intently, and articulate their opinions coherently. It can be tiresome and time-consuming to conduct an interview, so it's crucial to design the process with potential challenges and prejudices in mind. Based appreciating a variety of study methodologies (2015), the researcher followed the method of instrumental case study for qualitative inquiry, data collecting, and analysis.

Qualitative studies focus on 'what,' 'how,' and 'why' inquiries that help collect qualitative data to address the specific study issue (Moore, 2016). Such information is collected through surveys or interviews. Participants are offered open-ended questions to elicit specific data, which may subsequently be analysed

(Moore, 2016). As there are few data available on the topic of this study, the researcher will employ a qualitative methodology.

3.6 TIME HORIZON

The Time Horizon refers to the period of time within which the project is expected to be completed (Stainton, 2021). The temporal horizon in onion research refers to the period of time that is pertinent to the study (Alamgeer, 2022). This is the time frame throughout which the researcher is interested in examining the population (Alamgeer, 2022). The researcher selects the time frame based on the aims of the research and the nature of the investigation (Alamgeer, 2022). The researcher may be interested in researching the population at a certain time or analysing the population over a period (Alamgeer, 2022). According to Saunders et al. (2007), time ranges are necessary for research design regardless of the research approach employed. There are two different sorts of temporal horizons: longitudinal and cross-sectional (UKEssays, 2018). Longitudinal studies are repeated over an extended time frame, whereas cross-sectional research are limited to a particular time span (UKEssays, 2018). In addition to being restricted to a particular time period, the cross-sectional time horizon is utilised for this study.

Moreover, when performing research, you can choose to examine the issue at a single time, a ‘snapshot' time horizon, or over a period of time, a 'diary' time horizon (Bigat, 2012). The time horizon of a snapshot is referred to as the cross-sectional time horizon, whereas the time horizon of a diary is referred to as the longitudinal time horizon. Both of these may be utilised independent of the study's research approach or strategy (Saunders et al., 2016).

According to Saunders et al. (2007), temporal boundaries are required for research design regardless of the research approach chosen. The two forms of time scope are longitudinal and cross-sectional. Repeated longitudinal studies are conducted over a lengthy period of time. The cross-sectional study has a constrained time frame. The case study is based on interviews done during a brief period of time, and the research period is restricted to around 10 months, from

March 2022 to January 2023, in order to ensure the report's completion. As a result, a cross-sectional time horizon is applied. The researcher will collect data through conducting interviews and will analyse the data by the end of December 2022. Finally, provide the data acquired in January 2022 and its results.

3.7 PRIMARY DATA (interview)

A method to qualitative research that involves interviews includes "doing thorough individual interviews with a limited number of respondents to investigate their perspectives on a certain topic, programme, or circumstance" (Boyce and Neale, 2006). The qualitative research approach was created in the social sciences to enable researchers to look at social and cultural phenomena including feelings, ideas, behaviours, and dominant viewpoints (Babu, 2008). Interviews are classified into three types such as structured, semi-structured, and unstructured.

Therefore, for this case study, face-to-face semi-structured interviews were used. Structured and unstructured interview components are combined in semi-structured interviews (Dudovskiy, 2022). Semi-structured interviews require all interviewees to reply to a set of questions that the interviewer has prepared (Dudovskiy, 2022). Additionally, additional inquiries may be made during interviews to further explain and/or elaborate on certain issues (Dudovskiy, 2022). Your interviewer will not precisely adhere to a set list of questions during a semi-structured interview (Doyle, 2022). They will instead ask more open-ended queries (Doyle, 2022).

According to DeJonckheere and Vaughn (2019), the following procedures are necessary to properly prepare and perform semi-structured interviews, with an emphasis on applications in family medicine and primary care research (see table 3.1):

Table 3.1 Steps to designing and conducting semi-structured interviews
Step 1: Choosing the study's objectives and scope
Step 2: Participant identification
Step 3: Considering moral considerations
Step 4: Preparing the logistics involved
Step 5: Making the interviewing guide
Step 6: Building rapport and trust
Step 7: Carrying out the interview
Step 8: Recalling and contemplation
Step 9: Evaluating the data
Step 10: Demonstrating the reliability of the study
Step 11: Showing results in a paper or report

In order to gather information about respondents' perspectives, attitudes, and opinions regarding the role of TVET in the industry, a semi-structured interview method was utilised. The primary informants in the study examining the demands of the industry among TVET higher education are the respondents. Four persons representing four distinct industries are the informants.

3.8 SECONDARY DATA (existing data)

Sindhu (2012) asserts that secondary data were used for a different purpose unrelated to the research but nevertheless used to collect the data. The use of secondary sources is advantageous and essential for gaining knowledge and understanding of a wide range of informational topics (McCaston, 2005). These standards encompass a variety of factors, such as the text's publication date, the author's qualifications, the reliability of the source, the calibre of the discussions, the breadth of the analyses, how much the text advances the field of study, and so on (Dudovskiy, 2022). Secondary data gathering is covered in further depth in the chapter on literature review (Dudovskiy, 2022).

The three categories of secondary data include documents (text and non-text), surveys (censuses, continuous and regular surveys, and ad hoc surveys), and multiple source data (snapshot and longitudinal). Secondary resources for this study were gathered from a range of documents and other sources. Secondary data was gathered by the researcher using library databases such as Emerald Insight and Research Gate. The researcher searches the web page and library database for relevant articles, reports, and newspapers to support the purpose of this study. Several secondary data sources, including publications, online journals, and the work of previous researchers before us, may be used to compile the data for this study. The process of gathering primary data is more challenging, costly, and time-consuming than gathering secondary data. Secondary data analysis, on the other hand, may be ineffective in business research due to obsolete or erroneous information.

3.9 SOURCES OF DATA COLLECTION

Primarily, data for the study will be collected through in-person interviews. The entirety of face-to-face interviews will be voice recorded. There will be audio recordings of interviews, which will subsequently be manually transcribed into a Microsoft Word document.

3.10 SAMPLING

In qualitative research, non-probability sampling is a sample technique. In order to answer a research issue, Nikolopoulou (2022) defines non-probability sampling as a sampling technique that relies on factors other than randomness, such as the accessibility, proximity to the study subject, or subject matter expertise. Non-probability sampling is essential in qualitative research methodologies because the researcher tries to understand the phenomenon under investigation and not to generalise the findings.

The researcher's choice for the respondent selection procedure is purposive sampling. Several sampling methods that purposefully select individuals based on personal characteristics are together referred to as "purposive sampling" (Nikolopoulou, 2022). The best people are chosen as informants in a qualitative study because they can provide specific data about their own understanding of the issue (Silverman, 2013). Purposive sampling, one of the most prevalent sampling methods, groups participants based on predetermined criteria relevant to a particular research issue. Data collection procedures, the sample size may or may not be decided based on available resources and time, as well as the study's objectives. Objective sampling is more concerned with quality than quantity, as deliberate sampling of both participants can provide rich data for qualitative analysis, such as narrative research (Mohamed, 2017). When there are only a few informants that fit the researcher's criteria, this technique will be useful. In order to answer the research questions, a purposive sample was employed in this study to analyse certain characteristics of the intended respondents. All of the interviews are industry-related individuals with advanced TVET education. This is due to the fact that the opinions of the sampling group will supply ample data to answer the research questions. This study will employ Purposeful Sampling, and researchers will utilise their discretion to pick participants. In addition, when conducting the study, it is essential to recruit individuals who possess the pertinent knowledge and are ready and willing to offer it (Etikan & Bala, 2017).

3.11 DATA PROCESSING

In the interview, the researcher will collect and obtain information on the issue from the respondent. One moderator offers questions while the other participant responds. There are two methods for conducting an interview: in person and over the phone. Additionally, the Internet is gaining popularity as a medium for conducting interviews (Easwaramoorthy & Fataneh, 2006). In this study, the researcher decided to employ semi-structured questions, as this is the most common method of data gathering. Interviewers require a vast array of skills, including good social skills, listening skills, and communication abilities. Interviews are typically time-consuming and susceptible to obstacles and biases, which must be mitigated during the design phase. Therefore, semi-structured and open-ended interviews permit interviewees to convey their thoughts on the investigated issue. The goal of the qualitative technique employed in this study is to obtain their thoughts on assessing industry needs in higher education for TVET.

Before conducting interviews, define the purpose of the study. The interviewer must determine the study's requirements. Next, the interviewer formulates a question. This research question mirrors the objective. The interviewer will confer with the manager to choose the most effective questions. In this study, the interviewer suggested a face-to-face encounter based on the respondent's preference. The interviewer will capture the voice of the participant for data analysis.

During the interview, the candidate introduces himself and initiates a professional dialogue. The interviewer requested that the respondent sign a consent form supplied by the researcher, which indicated that the respondent accepted to participate in the study and that the report might use the respondent's words anonymously. All in-person interviews were conducted at times and locations chosen by the respondents. Research ethics begins with informed consent. The purpose is to ensure that human subjects consent to research voluntarily and with complete knowledge of what is expected (Research Services at the University of Oxford, 2021). Additionally, the interviewer will clarify the project's objectives, their position, and the duration of the interview. The interview lasts 30 to 60 minutes. 30 minutes to over an hour is the duration of one-time interviews with

people or groups (Corbin and Strauss, 2008). Respondents feel more at ease and are able to speak Malay when interviews are conducted in English and Malay. This study utilised tablets and mobile phones to record interviews.

The interviewer then organises the interview responses. Transcripts of semi-structured interviews are required. Tools for data analysis should use structured interview inputs. The interviewer transcribed the data from the audio recording. Two or three days were required to transcribe each respondent's response. Transcribing interviews conducted in Bahasa Melayu required translation into English. Additionally, the interviewer must correct careless wording. In preparation for data analysis, develop conclusions. The interviewer reviewed the transcription's data. After doing an analysis, the interviewer will determine whether the study's objectives were met. The study's conclusions will be based on these facts (Suter, 2012). The researcher must evaluate the reliability of the data to guarantee precision (Suter, 2012).

For this study, themes and patterns in the qualitative data were identified using thematic analysis. As face-to-face interviews are planned for this project, the data obtained from each interview will be manually transcribed utilising value coding onto a word document. The dates of the interviews are shown in table 3.2.

No.	Date	Research Informant
1.	28 October 2022	Respondent 1
2.	2 November 2022	Respondent 2
3.	4 November 2022	Respondent 3
4.	7 November 2022	Respondent 4

Table 3.2 show the dates of the performed interviews

3.12 SUMMARY

This chapter examines in detail the method of gathering qualitative data in a variety of formats in order to answer the research questions. The selection of informants is based on predetermined criteria. This chapter also discusses all methods involved in conducting the study. This chapter concludes with a discussion of data analysis.

CHAPTER 4

DATA ANALYSIS AND FINDINGS

4.0 INTRODUCTION

This chapter summarises the study's findings and provides a thorough analysis of the qualitative information gathered to gauge the demands of industry for technical and vocational education and training in higher education (TVET).

The data acquired through interviews were analysed using a thematic approach. The interview-collected data was analysed using theme analysis. The interviews were transcribed, and the resulting transcripts were classified and evaluated to determine the need for technical communication skills. The data were then categorised based on the emergent themes.

In this chapter, the results of the discussion based on the data collected and analysed by the researcher are provided. Based on the research question, this study's conclusions connect to various questions addressed by the researcher:

1) To examine the relationship exists between TVET and industry.

2) To determine the requirements required by TVET higher education towards the industry.

3) To investigate the skills required by TVET higher education towards the industry.

The real names of the respondents engaging in the study discussion are kept confidential and represented by pseudonyms such as 'respondent 1','respondent 2','respondent 3', and 'respondent 4', as agreed upon by the respondents before to the data collection process. Document analysis is one of the research methodologies utilised in the process of data analysis.

4.1 PROFILE OF EXPERTS

The qualitative data provided below was collected using semi-structured interview questions based on three research interview questions. Four respondents from different industrial businesses were called in order to collect data, which will aid in the comprehension of their perspectives and experiences. Positions held by study respondents included human resources, senior executives, managing directors, and principals.

Additionally, each of them has more than five years of experience working for their respective TVET-related industrial firms. These four industrial businesses have been in operation for more than seven years in Melaka. Furthermore, due to the ethical code of privacy and confidentiality, sensitive personally identifiable information about the respondents was not disclosed. The confidentiality convention is observed in order to protect the privacy of all individuals, to foster trust and rapport with study participants, and to uphold ethical standards and the integrity of the research process (Baez, 2002). Widely acknowledged as one of the essential ethical standards for clinical research, the confidentiality of research participants must be maintained (Adarmouch et al., 2020).

Initially, individuals were contacted via WhatsApp to acquire initial consent. Once the respondent has accepted to participate in this study, the respondent choose the interview's date, time, and location. Each participant was interviewed face-to-face in a different location at a different time by the people who determined the location and interview time. Each interview lasted longer than thirty minutes.

In addition, data was collected and evaluated using thematic analysis so that themes within the data could be identified. The obtained data is manually transcribed into text format, and this material is evaluated for conformity with the study's objectives. While transcription from audio recordings is considered standard practise in qualitative research (Tracy, 2019), it is not the only method for conducting qualitative interviews, and it is important to note that recording interviews may not be desirable, appropriate, or even possible for a variety of reasons. As the data were studied inside each data set and across data sets, the researcher found reoccurring themes during the coding and categorising processes.

Moreover, throughout the analysis phase, the researcher can find new themes by comparing different data sets. The researcher meticulously studies the data to uncover common themes — recurring subjects, concepts, and meaning patterns (Caulfield, 2022). As the analysis progressed, the researcher determined that the saturation threshold had been achieved after interviewing four respondents; hence, the candidate pool for the research study was eliminated. The details of the respondent are shown in Table 4.1.

Respondent Code	Gender	Age Bracket	Location	Date	Position	Education Level
Respondent 1	Female	30-40 Years	Pandan Jaya, Melaka	28 October 2022	Human Resources	Bachelor Degree Of Civil Engineering
Respondent 2	Male	Over 40 Years	Ayer Keroh, Melaka	2 November 2022	Senior Executive	Master Of Human Resource Management
Respondent 3	Male	Over 40 Years	Durian Tunggal, Melaka	4 November 2022	Managing Directors	Bachelor Of Mechanical Engineering
Respondent 4	Male	Over 40 Years	Taman Pandan Mawar, Melaka	7 November 2022	Principal	Bachelor Of Electrical Engineering

Table 4.1 show the details of the respondent

The researcher interviewed four respondents from different industrial companies in Melaka. The respondents who were interviewed consisted of four industrial companies in Melaka, namely Company 1, Company 2, Company 3, and Company 4. The interview session was conducted for two weeks. The questions presented are about assessing industry needs in TVET higher education, the connection between TVET and industry, industrial demand, and required skills.

The interview questions were developed based on the topics to ensure that the research objectives are met at the conclusion of the study.

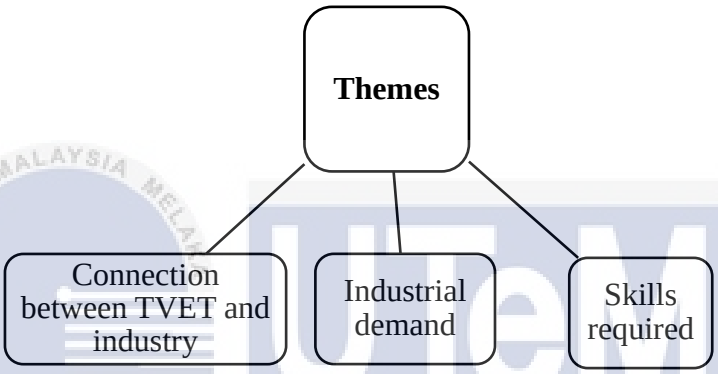

Figure 4.1 show the theme of a research strategy

The theme is one of the research techniques that expresses and illustrates the theoretical framework established in a research study through numerous literature review resources. The primary purpose of this study is to examine industry requirements for higher education in TVET. There are three sub-topics, as shown in Figure 4.1.

4.2 CONNECTION BETWEEN TVET AND INDUSTRY

The researcher has conducted several interview sessions with experienced respondents to identify the relationship between TVET and the industry in the respondent's capacity. In this study as well, the study found that TVET higher

education is very necessary for every industrial company. This is because TVET learning is more about skills and focuses on the needs of the industry. It is also supported by JPK Malaysia (2021), where TVET is a work-oriented education and training process with a major emphasis on industry practice. Figure 4.2 below shows the medium in which respondents gave their views on the connection between TVET and industry:

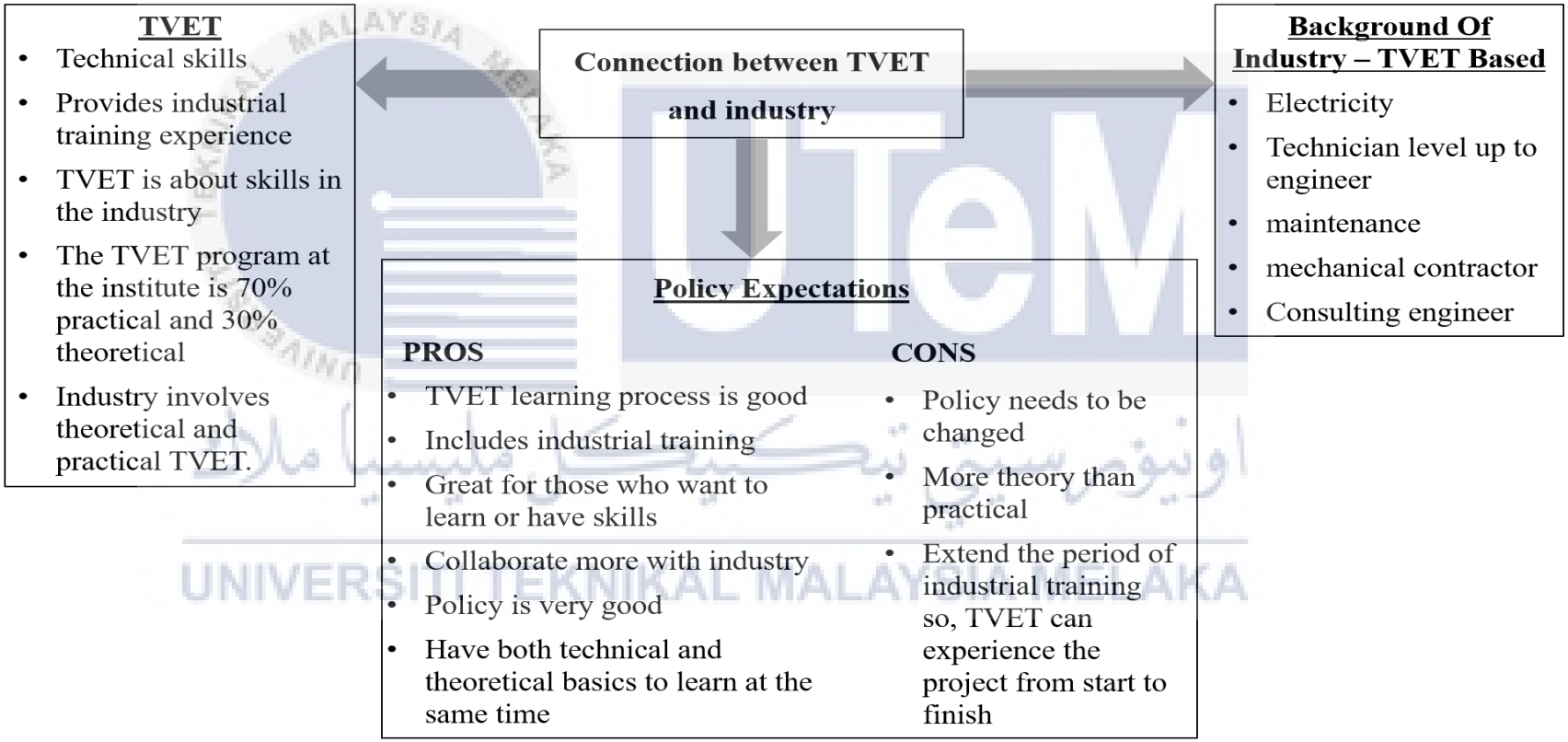

Figure 4.2 shows the respondents views on the connection between TVET and industry

4.2.1 TVET

A prominent theme that emerged was skills. TVET is a type of education that focuses on training and skills in order to produce competent workers in specific fields. As respondents said:

"TVET higher education it is very good because it has applied and focused the learning skills like technical work and it provides exposure in industrial training places." (Respondent 1)

"In general, in our industry, when we say TVET, it is related to skills. In my industry, it starts at the bottom. That is technician level, apprenticeship up to engineer." (Respondent 2)

According to the statements made by respondent 1 and respondent 2 in this study, the development of its technical skills is the main focus of technical and vocational education and training (TVET). Meanwhile, one of the responders shared their thoughts by saying:

"TVET are Skills. Most of my work involves TVET which is theoretical and practical. So TVET learning from the institute is 70% practical and 30% theory." (Respondent 3)

The statement of respondent 3 is supported by Krishnan's (2020) assertion that the TVET institutional module comprises of 30% theoretical and 70% practical components.

4.2.2 Background of Industry - TVET Based

For the theme of industrial TVET, it got a response from the respondents in the respondent's industry capacity with TVET. TVET is a field that is more about technical skills, and TVET is needed by industrial companies. TVET also has a variety of different programmes related to technical skills. For example:

"So what is related to our scope is the field of electricity and it does focus on technical work. In fact, it is closely related to these TVET students because they

are TVET higher education graduates. Closely related to our field of work, because we have this industry, it is more technical and it has to be technical, meaning technical services, and it is necessary and focused on students who have a TVET certificate." (Respondent 1)

"In my industry, it starts at the bottom. That is technician level, apprenticeship up to engineer. Focus on TVET in my industry. In my industry is an aerospace industry company. So it needs more oral skills. Oral skills in the field of technical skills, especially in composite, mechanical, additional interpretation and so on." (Respondent 2)

"What I understand about TVET, actually I may be in the technical field but not more than TVET but the fact is, when I work, I have something to do with TVET. This means most of my work. In the industry as an electrical, maintenance and mechanical contractor, it involves TVET which is theoretical as well as practical." (Respondent 3)

"Our field of application, the scope as a consulting engineer is more about project management including design, contract, monitoring, in terms of delivering project management from the initial stage, management with authority until handing over the project to the client. So, TVET for me, is relevant in my field of industry, for example, if we design on paper here, if the volt voltage electrical system design is made for a single diagram, we will determine the installation specs and so on." (Respondent 4)

According to the statements of the respondents from various industrial companies, the respondents' industrial companies were indeed involved with TVET. The background of industry - TVET based is shown in Table 4.2.

Respondents	Background of industry - TVET based
Respondents 1	Electricity
Respondents 2	Technician level up to engineer
Respondents 3	Electrical, maintenance and mechanical contractor
Respondents 4	Consulting engineer

Table 4.2 shows the background of industry - TVET based

4.2.3 Policy Expectations

Malaysia's TVET policy emphasises helping students improve their skills by providing them with quality education and training that meets the needs of the labour market. However, it was found that the current TVET higher education policy needs to be improved in such ways as:

> *"The current policy is to learn more theory than practical. These two things are too rigid causing the student not to be given the opportunity to show their skills... ... Because the student come to study and then want to work, before they can work they need to have qualifications or skills. So the current policy needs to be changed, for TVET higher education is to produce students who are needed by the industry, not students who meet the needs of colleges or institutes..." (Respondent 2)*

> *"The second is that students must always deal with or collaborate with the industry to ensure that it is an industry. This means that this skill institute is a main power feeder for the industry. The learning policy must be geared towards the needs of the industry, need to collaborate more with industry, more geared towards skills. Skills are not limited to technical skills but communication skills, so the institute needs to teach because these students will work." (Respondent 2)*

Therefore, according to respondent 2, the TVET higher education policy needs to be changed to produce TVET students who are needed by the industry, not the institute. In the meantime, according to respondent 4 on the TVET higher education policy, that is

> *"For me the industrial training period should be extended, should be extended as optimally as possible. Because it's more for our industry, for them with us it's more experience..... So when the industrial training period is extended there is an opportunity for them to experience or undergo the beginning of the project, there is that opportunity. So they can experience how from the beginning of the project, the middle and the end of the project. So, industrial training for this student should be extended again." (Respondent 4)*

However, according to respondent 4, the existing higher education TVET policy for industrial training for students has to be extended so that TVET students can

learn more and have more experience in the industry that TVET students do industrial training. With that, the table 4.3 below shows a summary of policy expectations from respondents:

Respondents	Policy Expectations
Respondents 1	- TVET learning process is good - Includes industrial training - Great for those who want to learn or have skills
Respondents 2	- More theory than practical - Policy needs to be changed - Collaborate more with industry
Respondents 3	- Policy is very good - Have both technical and theoretical basics to learn at the same time
Respondents 4	- Extend the period of industrial training - Can experience the project from start to finish

Table 4.3 shows the policy expectation

4.3 INDUSTRIAL DEMAND

A theme emerging from the data shows that industry demand is important for higher education TVET opportunities. Improved skills are needed to meet the needs of the industry, while the extended period for industrial training so that TVET students can get knowledge from industrial experience while also enhancing the quality of TVET to satisfy industry demands. Industry collaboration is cooperation between industry and TVET students so that the industry can help TVET students. Inserted the ACT module so that TVET students would better understand the requirements of regulations according to industry demand. The following figure 4.3 shows the medium in which respondents provided responses regarding industrial demand:

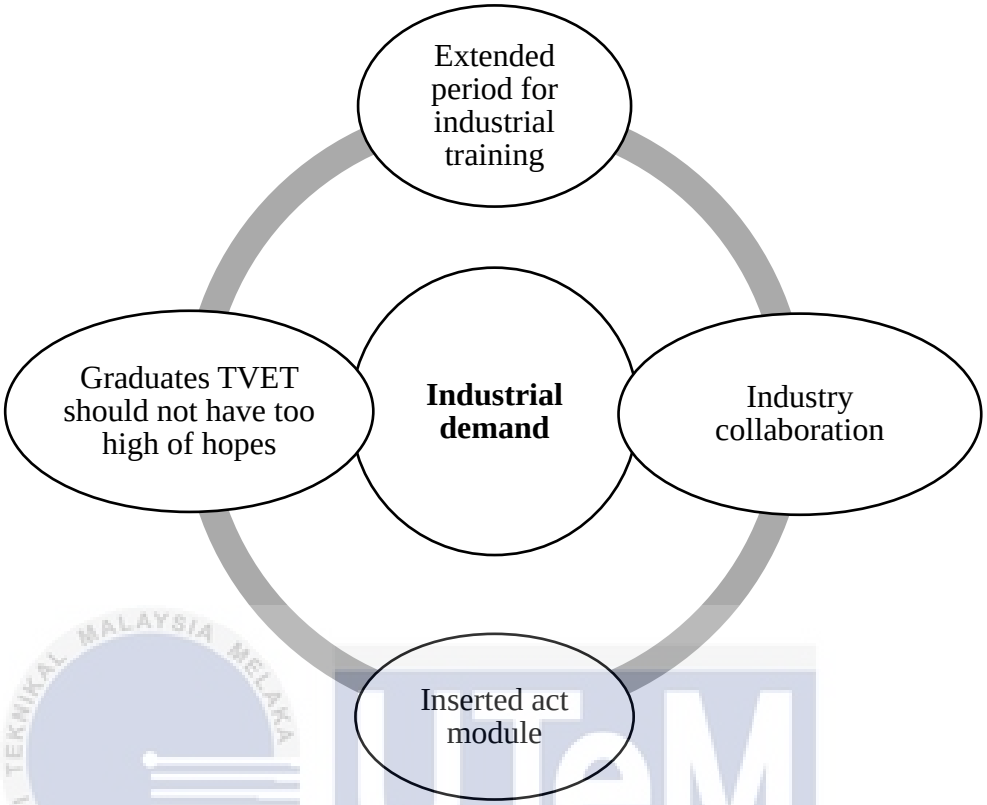

Figure 4.3 shows the respondents views on the industrial demand

4.3.1 Extended period for industrial training

The current industrial training period can be further extended for TVET students. With industrial training, TVET students can learn how to be in a real job situation. It is also supported by Halik Bassah (2022), where students benefit from "real life experience" that they can apply to the theoretical information they've gained in the classroom, while industrial training appears to help students develop the kinds of soft skills that are valued in the workforce. For instance:

> *"The current issue, TVET higher education takes a long time, we need this person to enter the industry because the subject is too long... ... so one of the main issues is that the learning period is too long, the theory is long but the practical is short... ... the practical should be long and the theory should be short..." (Respondent 2)*

"As a TVET student, you are given the opportunity and have more space at the university or more for an executive or engineer. I think they need to be more practical to address the needs of the industry. This means that the university has to be alert to the current needs of the industry" (Respondent 3)

4.3.2 Industry collaboration

For improvement suggestions, one common theme that emerges is the need for collaboration with industry. Collaboration between TVET students and industry can help to strengthen the technical skills of TVET students before they graduate. Subri et al. (2022) agree, stating that strategic collaboration between educational and training institutions and industry is a key method for increasing the skilled workforce that fulfils the needs of the industry. As an example:

"TVET must has many collaboration programs such as have coach, collaboration programs between institutes and employers. Where these people, apart from being trained at the skills centre, need a lot of exposure to the industry. When it comes to the collaboration, he also needs to play a role by bringing experts from the industry to teach TVET students so that the TVET are ready, with a visit to show the real industry because there are many or various machines in the real industry. Because in their institute there are no machines for them to learn, so when they go to industry they can learn and see for themselves the machines they will learn..." (Respondent 2)

"...Second, try to enter the industry to make simple products related to that industry. So TVET who can do it, they already have the skills, and it has shown that they have the skills that are ready for the industry. So there it needs to mix and match with the industry. So the student is ready for the market. So it is necessary to give these students a lot of hands-on exposure. So the student has tried to make it in that industry and was observed by the supervisor who came from that industry and it meets the standards and that can say that the student is ready for the market because this TVET student really wants to work when studies. So, it needs a lot of hands on, less theory." (Respondent 2)

"... The university should have a program to cover mismatch issues. This institute needs to cross itself with the industry so that students can learn and not miss out, because learning is always changing like technology..." (Respondent 3)

4.3.3 Inserted act module

The Act module inserted in this TVET higher education course so that TVET students can prepare themselves as completely as possible by practising and complying with the enforced requirements from the model Act syllabus book about the rules related to the TVET scope taken. According to Wahyudin (2019), the rule books are intended to prevent a problem from happening in order to avoid any accidents from happening. As a result, the Act module incorporated into TVET learning can be used in the TVET industry. For instance:

"If possible, TVET related to my industry has a module inserted about the electricity supply Act. When learning the Act, TVET students must know or understand the Act. When they go to any industry in this field, they will refer back to the Act because the Act is comprehensive, in the electrical field it is comprehensive. If possible prepare a syllabus for the act, for them to understand the Act as their guideline because the Act is important when entering the industry. So the institute, if possible, apply the syllabus of this Act because there are regulations in the Act. The relevant Act so that they have entered the industry they are ready." (Respondent 4)

4.3.4 Graduates TVET should not have too high of hopes

For this theme, TVET graduates should not have high expectations for the industry. Respondent 3 hopes that the institute would not set high expectation for these TVET student graduates when they reach the industry. As an example:

"... I hope all institutes know who these TVET students are, what level these TVET students are, and institutes don't give them big dreams with high salaries, don't tell them what they can do after graduation, don't give them big dreams

with things which is fun. This kind of thing destroys the industry, they imagine this industry as their salary they imagine. Because sometimes the industry cannot support them with their demanded salary demands."

Thus, according to respondent 3, he hopes that the institute does not give too big a dream to TVET graduates who do not have enough skills to place their high demands on an industry. It is supported by Azmi (2020), where graduates are accused of lacking skills and having negative attitudes such as fussiness in choosing jobs, especially in terms of the amount of salary.

4.4 SKILLS REQUIRED

In order to meet the needs of the industry among TVET students, there are suggestions to improve the deficiencies among TVET students in the industry by assessing the skills required by the industry. The following table 4.4 shows the medium in which respondents provided responses regarding skills required:

Skills required	
Communication skill • Industry communication is very important • Interaction needs to be communication • Communicate with superiors and subordinates • Slow communication hinders industry advancement	**Critical thinking and creative thinking skill** • ways to solve problems • TVET in industry can solve its own problems • ability to do problem solving • able to solve the issues they face

Table 4.4 shows the respondents views on the skills required

4.4.1 Communication skill

As suggested by respondent 4, the skills required in the industry are communication skills. If TVET students are not good at communicating, it can be difficult to work in the industry, especially when explaining to customers. It is also supported by Krishnan et al. (2019), which revealed that the graduates' poor communication skills affect their clarity of speech while handling customers. This is clear in the quote below:

> *"... in my industry communication is very important because we deal a lot with authorities... ... authorities related to mechanical and electrical. So, when there is interaction that means there needs to be communication, so it seems that it can be improved regarding communication... ...So there needs to be good communication and delivery..." (Respondent 4)*

> *"... Their soft skills, they have to be taught how to communicate with superiors and subordinates. Because when he goes up, there are people below and when he goes up again, he will be close to the people above. His superiors will have to answer how. They should learn to communicate..." (Respondent 2)*

> *"TVET students don't just have to know how to do it, they also have to know why they want to do it, just seeing that these TVET students look more quality and good. It's not that the TVET qualification has to have skills, but it has to have the skills to handle customers and so on. You can see the communication skills of TVET students at a minimal level, if this communication is lacking to go to a higher level in this industry is quite slow, communication skills, problem solving need to be developed to improve in this TVET executive" (Respondent 3)*

The need for communication skills was evident during interviews with respondents. Communication is often thought of as talking, but it is not the same as explaining or sending information. It is supported by the study of Ramamuruthy et al. (2021), in industry, the departments or units are inter-connected and this was the reason for all the experts to regard team communication as important in their routine jobs.

4.4.2 Critical thinking and creative thinking skill

Another theme that is beginning to emerge is the importance of both critical and creative thinking. Respondents indicated that students in TVET programmed lack the ability to think critically and creatively. When faced with an industry-specific challenge, TVET students cannot think of an effective solution on their own. This is evidenced in the ensuing excerpt:

> *"Based on their creative thinking, they are not enough for the industry. It should create and learn ways to solve problems that are out of their box thinking when they are training in the industry, so that when they enter the industry they can do it on their own... ... So they should improve their skills from creative thinking skills and critical thinking skills." (Respondent 1)*

> *I think they need to be more practical to address the needs of the industry. This means that the university has to be alert to the current needs of the industry. Another institute should take care in terms of critical thinking and creative thinking, how to create so that the student's critical and creative thinking is good and also the student's ability to do problem solving. This matter involves the basics of how to guide them to think outside the box because in the industry, experience or problems or tasks will be different..... Technology will be different between today and tomorrow, this year and next year. But students have to be alert and able to solve the issues they face. Critical and creative things that need to be improve means not just what they see or read, but this thing a guide needs to be formed to create creative and critical thinking." (Respondent 3)*

Hence, critical and creative thinking chances in the workplace are deemed essential for TVET students once they enter the industry. With critical and creative thinking skills, higher education in TVET can readily solve challenges. It is also reinforced by Kardoyo et al. (2020), where it is essential for students' to develop creative and critical thinking skills in order to solve non-routine situations in the modern environment.

4.5 SUMMARY

This chapter includes the study's analysis and findings based on interview data collection. The interview was done with four respondents selected from Melaka's industrial companies. Each respondent has shared their knowledge and experience regarding the relationship between TVET higher education and the industry, as well as the needs that TVET higher education must meet for the industry. This chapter concludes by describing the abilities required by TVET higher education for industry.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

The discussion in this chapter is based on the results of the data analysis pertaining to the information presented in chapter four. The objectives of this research project were accomplished, and its questions were well resolved. The initial purpose of research is to determine the relationship between TVET and industry. The purpose of the second study is to identify the industrial requirements for TVET higher education. The purpose of the third study is to investigate the skills required by the sector for further education in TVET. In addition, some more research projects are proposed in order to continue the assessment of industry demands in TVET higher education.

5.1 SUMMARY OF THE FINDING

Each individual has been imbued with values, and this study offers relevant parties insight into assessing the demands of the industry in TVET higher education. Through three research questions, the purpose of this study is to determine and evaluate the demands of the industry within TVET higher education.

5.1.1 The relationship between TVET and industry

The results of the study show that the relationship between TVET and this industry is both important and needed. Especially regarding this TVET, respondents responded that the skills learned by TVET students are needed by industrial companies. Respondents also stated that industries such as the electricity industry, maintenance, mechanical contractors, and various other industrial backgrounds are indeed related to TVET. It is supported by JPK Malaysia (2021), where TVET is an education and training process that has a job direction with the main emphasis on industry practices while, it aims to produce a competent workforce in certain fields, and the scope of TVET based on employment standards.

Nevertheless, it shows a different tendency by the respondents regarding the expectations of this TVET policy, where the respondents have good expectations for the TVET policy because of the good learning—this TVET learning has skills and theory learning at the same time—and so on regarding the goodness of this TVET policy. On the other hand, some respondents suggested that this TVET policy be changed because the learning is more theoretical than practical, and that the period of industrial training for TVET students be extended so that these TVET students can gain experience or learn from a project from start to finish.

5.1.2 The requirements required by TVET higher education towards the industry

Based on research objective 2, which is a requirement of TVET higher education for industry, respondents hope that the industrial training period for TVET trainees will be extended. Next, it also hopes that the students of this TVET institute will have collaborations with industrial companies that have the same TVET programme so that it can help these TVET students be better prepared to work in industrial companies after completing their studies. It is supported by Halik Bassah (2022), where training in the industry gives them real-life experience that can be linked to the theoretical knowledge acquired at university.

In addition, for the requirements required by TVET higher education for this industry, it can be included in the Act module related to the TVET program. This is so that TVET students know and understand the rules that TVET students must follow before entering the industry. Furthermore, respondent hopes that the institute can play a significant role for TVET students so that they do not have unrealistic expectations once they complete their studies. This is because it will have an impact on the industry due to the big dreams of these TVET students and their unreasonable demands, such as the demand for a large salary but insufficient skills.

5.1.3 The skills required by TVET higher education towards the industry

For research objective 3, which is the skills required by TVET higher education for the industry, according to the study's findings, the industry requires TVET higher education to develop not only technical skills but also soft skills such as communication, critical thinking, and creative thinking. This is important for industry communication skills because it will communicate with customers or any other party in explaining the concept or problem encountered, such as why the air conditioner is broken, and so on. It is supported by Jamaludin et al. (2019), where technical communication is strategic communication that exclusively considers the purpose, content, and context of communication to convey information effectively in the field of work.

After all, TVET higher education requires critical thinking and creative thinking skills for the industry. This is so that these TVET students in the industry are able to solve the problems they face on their own. This has been appropriately stated by Tze Kiong et al. (2019), where thinking skills are very important to the workforce as it helps to think broadly, synthesise information, integrate environmental and societal values and ethics into work, and solve the problem in creative ways.

5.2 CONTRIBUTION OF RESEARCH

The contribution of this work to current knowledge as supporting evidence. This research can serve as a guidance for institutions of TVET higher education that wish to enhance the quality of TVET higher education. Consequently, TVET higher education will be more attuned to industrial demands.

Moreover, this research can identify the requirements and abilities necessary by TVET higher education for the industry. A probability of TVET higher education students are unaware of the requirements of this industry. With awareness and general knowledge, higher education in TVET can improve the industry-required abilities.

5.3 LIMITATIONS

Due to the restrictions of doing this study through primary research, secondary data will be utilised more frequently because it is more readily accessible. In the meantime, the constraints of conducting this research in a short time frame. The period allotted to accomplish this research is constrained to approximately 10 months, from March 2022 to January 2023.

Moreover, the low sample size is a weakness of this study. The sample size for this study is limited to four respondents from various sectors. Therefore, it may not be possible to generalise the findings based on the information provided by the participants. Consequently, the conclusions may not be applicable to other nations, as they may not share the same characteristics. The allotted timeframe is also a key constraint on the conduct of this investigation. Consequently, it may not be possible to perform a comprehensive examination of all elements in their entirety.

5.4 RECOMMENDATION FOR FUTURE RESEARCH

The researcher has expressed their desire for everyone TVET higher education to benefit from this study. This work can be continued and analysed in greater depth by other scholars who are interested. For instance, the primary goal of this investigation was to evaluate the level of TVET-related higher education skills present in the sector.

After that, more study can be done by creating quantitative research techniques to gather statistical information. Since this study used qualitative methods, the results will differ if similar research is done in the future using quantitative methods. The results are based on a bigger sample size that is representative of the population and will include cumulative dates in a significant amount of data. To get reliable statistical data that reflected the respondents' perspectives, a sizable sample size was used.

Last but not least, technical and vocational education, or TVET, is higher education. All industries, specifically, require TVET higher education, it can be argued. As a result, in order to keep TVET higher education at a high standard, it is necessary to identify the areas that still require improvement. This will help to ensure that Malaysia's industries, especially those that employ TVET graduates, are of higher quality overall.

5.5 CONCLUSION

This study has highlighted in assessing the needs of the industry in TVET higher education. The respondent's experience of placing TVET students and graduates as trainees and employees will help produce more quality TVET graduates in the future. As for the TVET policy, it needs to be changed because it is more theoretical than practical, and the period of industrial training needs to be extended so that the output of TVET higher education students is more prepared for the industry. Basically, industry collaboration, inserted act module and TVET graduates should not have too high of hopes, it is a factor that can provide quality TVET higher education workers. In fact, for TVET higher education skills such as

soft skills i.e. communication, critical thinking and creative thinking are also industry requirements that TVET higher education students must have.

In conclusion, TVET institutions must work closely with industry by implementing outreach programs such as training and training trainers to develop the soft skills of graduates while improving the efficiency of teaching staff in strategic industry collaboration to meet industry needs in TVET higher education.

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APPENDIX 1

GANTT CHART PSM 1

Particulars	WEEK														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Information for Final Year Project 1															
Briefing Final Year Project 1															
Title Discussion And Confirmation With Supervisor															
Submit Verification Title Final Year Project 1															
Related Article Reviewing															
Chapter 1: Introduction															
Chapter 2 : Literature Review															
Chapter 3 : Methodology															
First Draft Submission															
Finalize The Final Year Project 1															
Presentation Final Year Project 1 - Slide Preparation															

APPENDIX 2

GANTT CHART PSM 2

Particulars	WEEK															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PSM 2 Briefing																
Interview Question Development																
Interview Sessions																
Transcription																
Data Analysis																
Chapter 4: Data Analysis And Findings																
Chapter 5: Conclusion And Recommendations																
Submit Chapter 4 And 5 For Checking																
Correction Of Chapter 4 And Chapter 5																
Presentation Of Final Year Project 2																
Final Edit For FYP 2 Report																
Submission For FYP 2																

APPENDIX 3

TRANSCRIPT 1

Respondent 1 **28 October 2022, 11.00 am – 11.40 am (40 minute)** **Location: staff room (Pandan Jaya, Melaka)**	
1. What do you know and understand about TVET higher education in your capacity? **Probes:** What do you understand by TVET higher education? How does TVET apply and relate in your industry? What do you think about TVET higher education?	
Respondent 1	TVET is technical and vocational. So what is related to our scope is the field of electricity and it does focus on technical work. In fact, it is closely related to these TVET students because they are TVET higher education graduates. Closely related to our field of work, because we have this industry, it is more technical and it has to be technical, meaning technical services, and it is necessary and focused on students who have a TVET certificate. TVET is Technical and Vocational Education and Training. In terms of skills applied in education or lessons that have been learned. Because he focuses more on the technical work, the hands-on work that they learn compared to the normal course of study. Produce a

	workforce that is skilled in his field, so when he checks, get a recognized certificate to enter the industry. TVET higher education it is very good, because it has applied and focused the learning skills like technical work and it provides exposure in industrial training places. They relate their work to their learning in the place of study and in the place of their work industry.
2. What are current issues related to TVET higher education? **Probes:** What is the importance and priority of these issues? What is your experience in facing or dealing with these issues? Why do you perceive these issues are relevant? How can these issues be resolved?	
Respondent 1	When students are in the industry they cannot solve problems because what they learn is basic. When they are in the industry they will find many problems that they have to think about. They have to think outside the box (critical thinking) how they want to solve, how to fix the problem that they didn't learn. When they are in the industry they have to find that knowledge. They have to dig around with what they can learn and how to solve problems that they don't learn at school. They should be critical thinking. They know basic knowledge such as installation, but when they come across a problem that they did not learn at the place of study, so they have to think critically to solve the problem. We have to teach and show them how to do it and give them to try. We will explain what to do if this happens.
3. How do you feel about the current TVET higher education policy? **Probes:** What do you think of the current TVET higher education policy?	

Respondent 1	This TVET learning process is good because there is industrial training and what they learn can be related to their industrial training and it is good. When there is TVET it is very good for the learning process of those who like to learn or have skills.
4. What is the requirements required by TVET students in the industry? **Prompt:** What do you think about TVET higher education's employment eligibility? Are the qualifications sufficient for industry demand?	
Respondent 1	Most practical students, when they enter the industry, mostly their skills are only basic and it is not certain whether it is based on the student or their learning is not enough for the industry. When they go to industrial sites, it's not enough skills for them to solve problems that they should think outside the box (critical thinking). So, I don't know if it depends on the student or if the learning is not enough for them.
5. How does the skills required by TVET higher education towards the industry? **Prompt:** What about skill development? How about in terms of employability skills such as communication, technology use, problem solving and time management? How about in terms of entrepreneurship which is networking skills, critical thinking skills, creative thinking skills and customer service skills?	
Respondent 1	As for their soft skills, it is good so far, but there are some skills that they need to improve or confirm again in terms of critical thinking skills and creative thinking skills. In terms of time management, it's a bit slow, maybe because the skills they have are not enough (needs some improvement) so it takes a long time to solve the work problem. If they don't understand, they

	will ask their leader. In terms of problem solving, they try if they don't understand, they will ask and the leader will explain it first and they will try, if they don't know, the leader will show them how (so far good). From technology use, mostly good, they know how to use the method. In terms of communication it's good, if they don't understand they won't keep quiet. Networking skills are not a problem for them, they are good. Based on their skills it makes customers love their way from their neat and clean work. The skill of taking care of the client in terms of communicating and so on is very good and pleasing to the customer. Based on their creative thinking, they are not enough for the industry. It should create and learn ways to solve problems that are out of their box thinking when they are training in the industry, so that when they enter the industry they can do it on their own. Because when studying it is different when you enter the industry. When they study, they only learn the basics and enter the industry, it is different from the way they learn when they encounter problems other than what they learn. So they should improve their skills from creative thinking skills and critical thinking skills. Their customer service skills are also good, there is no problem for them to communicate or explain to customers. And the customers have so far given good feedback with the explanations they give about the problems the customers face such as if the air conditioner is broken, they explain and explain what is broken and what needs to be fixed with a certain cost.
6. What do you think about TVET and non-TVET graduates of higher education? **<u>Prompt:</u>** What are your thoughts on higher education graduates from TVET and non-TVET? What about others skill?	
Respondent 1	From TVET and non-TVET graduates it is different. Because the skills of these TVETs in terms of their skills in the field of technology

	are many, they also have a lot of hands-on work so they can relate to the industry. In fact, TVET graduates have practical workshops, skills and learn some soft skills such as how to handle customers, they are better prepared to enter the field of employment. And there are some TVET study centres that also provide entrepreneur classes. From there, TVET graduates can learn how to handle customer compared to non-TVET graduates.
7. What about the mismatch between TVET higher education and expectations from the industry? **Prompt:** How does TVET higher education different from expectations in the industry?	
Respondent 1	Their creative thinking and critical thinking. In terms of creative thinking and critical thinking, they are not the same as what the industry thinks. So all students should have critical thinking and creative thinking so that, when they encounter other problems from what they learn, they know how to solve those problems. So they should improve their skills because some students learn to know, when they want to do they don't know.

APPENDIX 4

TRANSCRIPT 2

Respondent 2 **2 November 2022, 7.40 pm – 8.30 pm (50 minute)** **Location: Food Court Aeon (Ayer Keroh, Melaka)**	
1. What do you know and understand about TVET higher education in your capacity? **Probes:** What do you understand by TVET higher education? How does TVET apply and relate in your industry? What do you think about TVET higher education?	
Respondent 2	This TVET is related to skills In CTRM, starting from the lower level, that is technician level, apprenticeship up to engineer. Focus on TVET in CTRM. CTRM is an aerospace industry company. So it needs more oral skills. Oral skills in the field of technical skills, especially in composite, mechanical, additional interpretation and so on. So, this TVET starts from the upper skills according to the level of upskilling and reskilling. Until one time we need different skilling levels such as CTRM called skill matrix, this skill matrix ensures that everyone in production who is involved in this technical has different skills according to their skills. So, it starts from the lower level, after graduating from SPM or tahfidz, it enters CTRM to go through an apprenticeship first for SKM level 2. Then, after graduating from SKM / certificate / diploma, it will go to one level and will go through an apprenticeship, which is not based on SKM but based on courses.

	-certain courses in the program such as mechanics, assembling and so on for these people because they already have SKM / skills centre certificate / diploma / MQA / UTeM and so on, they will go directly to the apprenticeship phase 2 and will not go through phase 1. Course it is shorter, so before getting into the real job. Then level 3, which is the degree level, they enter have who will go through the protégé, for those who are involved in this protégé, some have the technical part and some don't. As for the technical part, they are specialized to go through the program, where it will be applied theoretically and practically about composites. Then these people will be in the field for composite. That is the basic level where everyone who enters the CTRM, whether they have the basics or not or not or indeed in the technical field, need to go through this composite program first and then they can enter the panel. Compared to people with experience, it is indeed experienced. That's the difference. So in general, outsiders who are fresh or don't know much have to go through this program first. This means that TVET starts from the bottom then when they enter CTRM they will work with diploma / SPM / SKM / tahfidz and so on but there is no degree, they are a technician position downwards, they need to upgrade their skills first, when they enter they will pass skill level 1, so, to encourage them to enter the next level, they have an exam called level 2. If they pass the level 2 test, they will get level 2 skills. After a few years, there will be a test for level 3. When it reaches skill level 3 it is almost to the highest level. For level 4 is the upper level, level 4 is already an expert. So, upskilling and reskilling is for those who are working. For example level 1 wants to go to level 2 so upskilling. It means that he already has that skill and his skill is increasing. For reskilling, people who are in level 1 need to reshuffle their skills, they need to sharpen their skills. All employees in CTRM will be involved in upskilling and reskilling. Engineers are not involved because they are involved in management called technical white collar. Blue colour like technician down. In CTRM there is also PPT which is the

	"Pengiktirafan Pencapaian Terdahulu", specially issued to existing employees to increase their skills recognized by JPK, whether SKM 1 / SKM 2 / it depends. If they have served more than 10 years they are eligible to be recognized up to level 5. This recognition is the same as a bachelor degree. TVET higher education, almost all firms or industries need TVET. There is no industry without TVET. Except those who write everything like it's not necessarily vocational. So industry will be involved in TVET.
2. What are current issues related to TVET higher education? **Probes:** What is the importance and priority of these issues? What is your experience in facing or dealing with these issues? Why do you perceive these issues are relevant? How can these issues be resolved?	
Respondent 2	The current issue, TVET higher education takes a long time, we need this person to enter the industry. Because the subject is too long Second, SKM and MQA issues, SKM issues JPK certificates while MQA issues community skills certificates, polytechnics, UTM and so on. so one of the main issues is that the learning period is too long, the theory is long but the practical is short That's why, when it comes to TVET, it has a lot of hands on, for example in GPK there is a format, there is 20% theory and 80% practical. So, people will see this TVET from SKM, current issue. An example of community college graduates, even though they have skills, sometimes there is conflict. Where 1 entity is under JPK, another is under MQA, the second is under KPM while JPK is under KSM.

	It should be TVET, the practical should be long and the theory should be short. There are 70% theory 70% practical, then hands on is high. These two need harmony so that the student who enters any institute, so that he only carries one certificate that can be accepted by all industry. MQA is recognized but SKM is not because it has its own body. The current issue, the application issue between the SKM and MQA issue itself needs to be leveraged on its own.
3. How do you feel about the current TVET higher education policy? **Probes:** What do you think of the current TVET higher education policy?	
Respondent 2	The current policy is to learn more theory than practical. These two things are too rigid causing the student not to be given the opportunity to show their skills. Example of a graduate studying for 3 years, class 2 and a half years theory only and practical 6 months only. While student need exposure, get involved with industrial exposure, the policy needs to be changed to create a skilled workforce for the industry. Because the student come to study and then want to work, before they can work they need to have qualifications or skills. So the current policy needs to be changed, for TVET higher education is to produce students who are needed by the industry, not students who meet the needs of colleges or institutes. The second is that students must always deal with or collaborate with the industry to ensure that it is an industry. This means that this skill institute is a main power feeder for the industry. The learning policy must be geared towards the needs of the industry, need to collaborate more with industry, more geared towards skills. Skills are not limited to technical skills but communication skills, so the institute needs to teach because these students will work
4. What is the requirements required by TVET students in the industry?	

Prompt: What do you think about TVET higher education's employment eligibility? Are the qualifications sufficient for industry demand?	
Respondent 2	So far, the way TVET is entered is not the same, for example if you enter ILP or IKM you must have SPM, but to enter Giat Mara you don't need SPM, grade 6 is enough, after grade 6 you can take TVET. In Terengganu, many of them study TVET as student, because they don't want to finish studying, then they learn to take skills they are interested in. The problem is, even though they have SKM, they are under 18 years old. So employers should be careful when working, because they are subject to the Children and Young People Employment Act. Many industries want the minimum SKM, usually SPM graduates for big companies will not involve them technically. An example of a warehouse that is not technically involved. When large companies that have machines, at least they have to have SKM and that SKM is related to the needs of the industry, for example automotive, if there is no SKM, there will be many errors. That's why minimum workers need SKM as a condition to enter the industry, minimum SKM 2. His minimum eligibility depends on the approval of the industry, because if the machine only takes SPM students, he does not learn to be a technician, he should be a helper, but you have to remember that in the field of industry, you have to create an initiative, teach him and he has to start from the bottom. Even if he has SPM without SKM, he learns from those who supervise him who are experts, he will be proficient in a long time and it depends on the size of the industry.
5. How does the skills required by TVET higher education towards the industry? **Prompt:** What about skill development? How about in terms of employability skills such as communication, technology use, problem solving and time management? How about in terms of entrepreneurship which is networking skills, critical thinking skills, creative thinking skills and customer service skills?	

Respondent 2	TVET must has many collaboration programs such as have coach, collaboration programs between institutes and employers. Where these people, apart from being trained at the skills centre, need a lot of exposure to the industry. When it comes to the collaboration, he also needs to play a role by bringing experts from the industry to teach TVET students so that the boys are ready, with a visit to show the real industry because there are many or various machines in the real industry. Because in their institute there are no machines for them to learn, so when they go to industry they can learn and see for themselves the machines they will learn. Second, try to enter the industry to make simple products related to that industry. So TVET boys who can do it, they already have the skills, and it has shown that they have the skills that are ready for the industry. So there it needs to mix and match with the industry. So the student is ready for the market. So it is necessary to give these students a lot of hands-on exposure. So the student has tried to make it in that industry and was observed by the supervisor who came from that industry and it meets the standards and he can say that the student is ready for the market. Because this TVET student, he really wants to work when he studies. So, it needs a lot of hands on, less theory. In terms of time management, there is no problem, usually people involved in technical matters are flexible. customer service skills so far no problem In terms of using technology, their networking skills are no problem, they can do it, if they don't understand they will ask. for problem solving it's ok, it needs to be improved in any problem faced Teach them in terms of making reports, they don't make reports because they are more into skills.

	Their soft skills, they have to be taught how to communicate with superiors and subordinates. Because when he goes up, there are people below and when he goes up again, he will be close to the people above. His superiors will have to answer how. They should learn to communicate. Critical thinking and creative thinking depends on a person's skills, so teach accordingly. Communication and reporting they need to learn
6. What do you think about TVET and non-TVET graduates of higher education? **Prompt:** What are your thoughts on higher education graduates from TVET and non-TVET? What about others skill?	
Respondent 2	The difference is that a student in TVET is more skilled than a non-TVET student. Second, the theoretical position in TVET class is less compared to non-TVET. Third, the market for TVET graduates is high compared to non-TVET students. Non-TVET, he is more of a theoretical expert than TVET. These TVET students are more willing to work than non-TVET students because these TVET students have been exposed before and the TVET job market is higher than non-TVET students and TVET they can go to any industry because of the skills they have and have learned.
7. What about the mismatch between TVET higher education and expectations from the industry? **Prompt:** How does TVET higher education different from expectations in the industry?	
Respondent 2	Not ready, too much course work. Too much theory but short practical cause the industry to not be able to teach much so that they have time to rotate their jobs, learn more processes in the industry. Students need to be prepared in terms of preparation to enter the industry.

Opinion	
Respondent 2	TVET is really important, TVET has to be ready to make a paradigm shift from the old way to a new way that focuses more on skills, when they have more skills than theory. This TVET you have to touch and feel, hold, look at the taste. Non TVET it does not exist. It shortens the theoretical period and targets the needs of the industry

APPENDIX 5

TRANSCRIPT 3

Respondent 3 **4 November 2022, 9.30 am – 10.15 am (45 minute)** **Location: staff room (Durian Tunggal, Melaka)**	
Researcher	**1. What do you know and understand about TVET higher education in your capacity?** **Probes:** What do you understand by TVET higher education? How does TVET apply and relate in your industry? What do you think about TVET higher education?
Respondent 3	TVET are Skills. Most of my work involves TVET which is theoretical and practical. So TVET learning from the institute is 70% practical and 30% theory. Most institutes or IPTs involve TVET more than polytechnics / IKM / ILP or some universities. TVET is a broad field, but you have to teach how students deliver
Researcher	**2. What are current issues related to TVET higher education?** **Probes:** What is the importance and priority of these issues? What is your experience in facing or dealing with these issues? Why do you perceive these issues are relevant? How can these issues be resolved?
Respondent 3	The type of education does the institution offer in order to study TVET, From ILP / IKM from several courses they are ready for this TVET, some of them need to be upgraded in terms of their equipment. Institute that there are not many issues, only issues from

	the students themselves. For TVET who see issues involving universities, the issue is how universities want to bring or recruit these students or want to give them a course in TVET. Because they are in two, one in theory they bring, study. Another skill they need to adopt and do. So, there are some of these issues. I see, when it comes to executive / engineer level, theory and practical must go hand in hand, and they can't say TVET is mostly technical or hands on it in Malaysia. Engineer is considered for problem solving. Problem solving is 2 things, namely theory and practical. So, how does the university want to adopt students to this matter? Why, because the university will not see the full hands on and it is very different from the industry. Executive or engineer level theory and practical must go hand in hand. Follow my experience, when you meet TVET students, they are sometimes trapped by themselves whether they want to be an installer or a senior engineer. But the technical part doesn't matter. Engineer can be in theoretical and practical conditions. It does not mean that he can do this TVET by himself but he has to know how to do it.
Researcher	**3. How do you feel about the current TVET higher education policy?** **Probes:** What do you think of the current TVET higher education policy?
Respondent 3	The policy is very good, it means that the industry needs TVET people because one of the factors of our country is the industry, so we need TVET graduates because of the quality of this work. And our dependence on low skill levels, so with TVET we can have high hand products, factories. So this TVET is important because they will be given a basic foundation for technical, theoretical at the same time the university has to be ready to expose these students to more basic and theoretical to adopt in the industry that has implementation to technology. In this TVET, should provides a platform for students to

	prepare more details for the industry. The TVET policy is good, but it's not an issue like those kids who are too lazy to read books have to enter TVET. If you can't score in theory, you have to enter TVET. This is not that kind.
Researcher	**4. What is the requirements required by TVET students in the industry?** **Prompt:** What do you think about TVET higher education's employment eligibility? Are the qualifications sufficient for industry demand?
Respondent 3	As a TVET student, you are given the opportunity and have more space at the university or more for an executive or engineer. I think they need to be more practical to address the needs of the industry. This means that the university has to be alert to the current needs of the industry. Another institute should take care in terms of critical thinking and creative thinking, how to create so that the student's critical and creative thinking is good and also the student's ability to do problem solving. This matter involves the basics of how to guide them to think outside the box because in the industry, experience or problems or tasks will be different. The problem or project will be different from one day to the next. Technology will be different between today and tomorrow, this year and next year. But students have to be alert and able to solve the issues they face. Critical and creative things that need to be improve means not just what they see or read, but this thing a guide needs to be formed to create creative and critical thinking. And communication, one of the issues in TVET is communication the way they present. So how to handle the problem. How to deliver the problem to clients. Convenience client about existing problems or convenience management issues. So, communication, critical and creative thinking, preparation in terms of presentation. How to collect data, how to use data, so, and this matter is important to the executive level, engineer, to present or

	highlight an issue or implement the access they have already made, so things like this need to be there for them to prepare to implement things like that. That's what I see as an issue that this TVET student needs to have for the industry. Theory needs to be there to implement in the industry.
Researcher	**5. How does the skills required by TVET higher education towards the industry?** **Prompt:** What about skill development? How about in terms of employability skills such as communication, technology use, problem solving and time management? How about in terms of entrepreneurship which networking skills, critical thinking skills, creative thinking skills and customer service skills?
Respondent 3	TVET students don't just have to know how to do it, they also have to know why they want to do it, just seeing that these TVET students look more quality and good. It's not that the TVET qualification has to have skills, but it has to have the skills to handle customers and so on. You can see the communication skills of TVET students at a minimal level, if this communication is lacking to go to a higher level in this industry is quite slow, communication skills, problem solving need to be developed to improve in this TVET executive. Customer service skills so far are no problem, if they have knowledge to convey Time management, this worker skill they need to be good at managing their time, but so far there are no issues TVET students are good in terms of technology use skills and networking skills. If skills and theory can go hand in hand, universities have to provide teaching staff who are able to make these students like this.

	Universities must be able to provide equipment related to industry. It's not just there, but it can be used according to the industry. Like the equipment with the fields they study, so that they can meet and learn how to handle, how to use, at the same time they have to be basic, there is theory they need to know. The learning atmosphere has to be the same or with the industry such as clothing if in a workshop. Need to apply problem solving, critical thinking, communication is necessary in this TVET student How to get information, not just search but communication. TVET executive, how to sit with the environment. Their soft skills need to be improved.
Researcher	**6. What do you think about TVET and non-TVET graduates of higher education?** **Prompt:** What are your thoughts on higher education graduates from TVET and non-TVET? What about others skill?
Respondent 3	It depends on the individual, if they are inherited by their family with that skill. And in terms of TVET and non-TVET it does seem different. Because of the TVET graduates' attitude because there are other issues for TVET and non-TVET. But in the current situation, I want to improve them through TVET. I assume TVET with non-TVET is more of a skill worker. These TVET graduates are technically very good and they have some theory and more importantly this student has a TVET certificate related to the course they are taking for them to be better prepared when they enter the world of work later. But in terms of requirements, it is necessary to learn to follow the TVET program. Compared to non-TVET. Non-TVET should be like taking part-time TVET classes. TVET graduates are better. Only, I hope all institutes know who they are, what their level is, and institutes don't scare them with high salaries, don't tell them what they can do after graduation, don't scare them

	with fun things. Things like this destroy the industry, they imagine this industry as their salary they imagine. Because sometimes the industry cannot support them with their salary requests.
Researcher	**7. What about the mismatch between TVET higher education and expectations from the industry?** **Prompt:** How does TVET higher education different from expectations in the industry?
Respondent 3	Some of these TVETs are too focused on one industry or sector. If in Malaysia we are more general and according to the requirements of the industry, students are capable of multiple fields. This TVET is able to adapt itself to the industry. At one level you can see that they are mismatched but there is no need to highlight too much. Usually this institute is too focused on one thing. So when students start working, they feel that the field is a little different from what they study, they feel a mismatch. Mismatch is caused by, for example, this student studying engineering but he does sales or things that are not related to their field. That can be called a mismatch. For this TVET mismatch in terms of the details of what they learn and what the industry expects may be a mismatch but can be handled but for the executive level. Compared to the skill level of workers, they must be in their field, a field related to them. Our abilities, how to solve problem solving are all in the field of executive engineering. Engineer levels they can handle. University how to adopt when you enter the industry, you have to know the equipment used and so on. The university should have a program to cover mismatch issues. This institute needs to cross itself with the industry so that students can learn and not miss out, because learning is always changing like technology.

	Use theoretical knowledge, because we will use how to manage in the industry This theory is important for soft skills and practical The power of knowledge is great, it will differentiate us from other people or the industry. Knowledge is important

APPENDIX 6

TRANSCRIPT 4

Respondent 4 **7 November 2022, 11.20 am – 11.50 am (30 minute)** **Location: staff room (Taman Pandan Mawar, Melaka)**	
Researcher	**1. What do you know and understand about TVET higher education in your capacity?** **Probes:** What do you understand by TVET higher education? How does TVET apply and relate in your industry? What do you think about TVET higher education?
Respondent 4	Our field of application, the scope as a consulting engineer is more about project management including design, contract, monitoring, in terms of delivering project management from the initial stage, management with authority until handing over the project to the client. So, TVET for me, is relevant in my field of industry, for example, if we design on paper here, if the volt voltage electrical system design is made for a single diagram, we will determine the installation specs and so on . Such as switch box specs, cable specs, any installation that we design. But this TVET is relevant, he said that he means that it is not a theoretical level, but there is direct training such as wiring, underground experience before, as an example of a student, if student joins our job, he already has basic experience in terms of electrical wiring, in addition to that, an example of experience as a wireman. When entering the industry, we are more into design so they can apply both theory and practice which are very relevant.

Researcher	**2. What are current issues related to TVET higher education?** **Probes:** What is the importance and priority of these issues? What is your experience in facing or dealing with these issues? Why do you perceive these issues are relevant? How can these issues be resolved?
Respondent 4	The issue we have faced is communication, when in my industry communication is very important because we deal a lot with authorities, for example here there are dealings with TNB, the engineering traffic council, fire and rescue bridges, authorities related to mechanical and electrical. So, when there is interaction that means there needs to be communication, so it seems that it can be improved regarding communication. Then we have every project that is usually normally a site like technical meetings and so on. So there needs to be good communication and delivery. It is possible that the student has knowledge but we hope that the student can communicate well and deliver well. There is no need for unnecessary communication. It's more about communication that needs to mean conveying information, updating the status to everyone, conveying the progress of our work, suggesting solutions. That sum requires balanced knowledge with communication. If you don't know how to communicate well, the results will not be satisfactory. Communication needs to be improved, he has to better understand our mind-set, and he has to know what needs to be conveyed. The lack of communication needs to be improved.
Researcher	**3. How do you feel about the current TVET higher education policy?** **Probes:** What do you think of the current TVET higher education policy?

Respondent 4	For me the industrial training period should be extended, should be extended as optimally as possible. Because it's more for our industry, for them with us it's more experience. Meaning, for example, when we have a project, the student knows that the project is already in the middle, so the student does not feel that the experience is from the beginning. So when the industrial training period is extended there is an opportunity for them to experience or undergo the beginning of the project, there is that opportunity. So they can experience how from the beginning of the project, the middle and the end of the project. So, industrial training for this student should be extended again
Researcher	**4. What is the requirements required by TVET students in the industry?** **Prompt:** What do you think about TVET higher education's employment eligibility? Are the qualifications sufficient for industry demand?
Respondent 4	For me, in terms of academics, that's enough, it's just that their soft skills are lacking such as communication, attitude is mandatory if you go anywhere, it's mandatory to maintain attitude. But for me the soft skill of communication needs to be mastered. Because sometimes our delivery is like an industry consultant, it gives awareness, it educates, and it also gives solutions. So there must be communication, explanation, going to meetings we have to explain to the public, our clients, and other teams. They will look to us, so we need to have communication skills. It is enough to be able to convey information well, the necessary information and necessary information must be prepared.

	If possible, TVET related to my industry has a module inserted about the electricity supply act. When learning the act, he must know or understand the act. When they go to any industry in this field, they will refer back to the act, because the act is comprehensive, in the electrical field it is comprehensive. If possible prepare a syllabus for the act, for them to understand the act as their guideline. Because the act is important when entering the industry. So the institute, if possible, apply the syllabus of this act because there are regulations in the act. The relevant act so that they have entered the industry they are ready. TVET hopes because it is hands on, so their soft skills are lacking. On the other hand, it is good because it is balanced with theory and practical. So for our industry it's easy. It's just that their communication is lacking Communication needs to be there when they start working, they have to know how to deliver. If you can polish their soft skills in terms of communication, it is very important
Researcher	**5. How does the skills required by TVET higher education towards the industry?** **Prompt:** What about skill development? How about in terms of employability skills such as communication, technology use, problem solving and time management? How about in terms of entrepreneurship which is networking skills, critical thinking skills, creative thinking skills and customer service skills?
Respondent 4	Time management is not a problem, critical thinking to solve the problem is good, not good, but good means that it can be improved to solve the problem, if there is an issue, he will come back to us,

	then we will ask him for suggestions, if we think it needs to be improved, we will give suggestions. We are here more for an assignment, we will check the draft first. Critical thinking is ok, just need a guide for them. Their soft skills need to be polished again, because our industry is indoor and outdoor, indoor design may lack interaction with the public, but when it's outdoor we have interaction, so it plays a very important role because it wants to explain everything. If there is no communication skill, the work cannot be completed. Skill in dealing with customers is good, there are no issues For our industry, there is no problem if so far to use any machine, as long as he understands the concept. Any machine refer to the catalogue and specifications. For our industry it's more about using apps. Their technology use skills are good, as long as they have the basics and understand the concept, they need to refer to the catalogue to use the software. Their networking skills are good, as long as they don't stay silent if they face any problems and are active Their creative thinking is good, they just need a guide Solving the problem is fine, just need a guide
Researcher	**6. What do you think about TVET and non-TVET graduates of higher education?** **Prompt:** What are your thoughts on higher education graduates from TVET and non-TVET? What about others skill?
Respondent 4	It is different, because this TVET graduate is more relevant to our industry, because the theoretical background is higher. We need a background to learn theory and skills because we are a consultant industry. If just skill is not enough.

Researcher	**7. What about the mismatch between TVET higher education and expectations from the industry?** **Prompt:** How does TVET higher education different from expectations in the industry?
Respondent 4	Communication, when you leave or finish studying, communication is lacking. Because our industry is a consultant, if he doesn't have communication skills, his field will be limited because he has to interact with people. If he is not good at interaction, he has to sit in the office. But if he just sits in the office, it's less, but he has to interact with people. Communication is an advantage, communicating what we do, we can do work, we can do design but how do we tell people, explain it to people. We know the design we make but we have to know how to explain it to those who don't know the meaning of our design. You have to have the skill to explain or convey.