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TVET Learning in the Time of the Pandemic: The Malaysian Insight

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Abstract

The global pandemic of covid-19 has caused huge impact on the world, almost every field has been direct or indirectly affected, including the TVET education system. This article is intended to highlight to various stakeholders, including students, stakeholders, governments, and educational institutions, issues relating to TVET education during crisis. It can be beneficial to generate and implement new ideas in order to provide stakeholders with an alternate course of action. This article highlights educational guidelines and published literature on TVET education systems worldwide. Additionally, it discusses TVET prospects over the upcoming years as well as ways to mitigate the effects of covid-19. The time distribution for these effects are categorised as coping, intermediate and recovery phases. TVET in Malaysia is discussed in depth and how it is implemented in the industries in Malaysia. The article also outlines the strategies implemented by the Malaysian government to ensure the smooth operation of the TVET sector during the pandemic's duration.

Key words: TVET, COVID-19, education, Malaysia.

1.0. Introduction

Since the inception of the global pandemic, researchers have been studying the pathology of the virus, how it spreads among human cultures, how people react to it, the causes it has left on humanity, how management systems change, and how to cure it (Lakhani, Pillai, Zehra, Sharma & Sodhi, 2020). Every field i.e. policy makers, health care providers, researchers epidemiologists, first responders, community workers, governments and all stakeholders are involved to ensure healthcare facilities and first aid critical services and they aim to learn to change the pattern of living, communicating in order to save the lives of people (Rawal, Jubayer, Choudhury, Islam & Abdullah, 2021). Unfortunately, this has become a race with time likewise its predecessors i.e. MERS-COVs, SARs, Influenza and other outbreaks (Wong & Saier, 2021). However, this pandemic of Covid-19 has demonstrated that it is controllable through effective rapid learning and adaptation to changes in living standards, thereby reducing the risk of affecting the population and the environment. The preventive measures offered by public health are the cure and solution to this epidemic (Cao, Fang, Hou, Han, Xu, Dong & Zheng, 2020).

This pandemic has demonstrated the critical nature of vocational skills and trainings, which are now to be viewed as a critical source of effective communication requirements; the WHO (World Health Organization) has left no stone unturned in this regard. The objective is to generate and plan new ideas in order to provide an alternative path for stakeholders and to ensure that academic achievement requirements are met. This study provides guidelines and a structured timeline of the literature to assist educational committees in fighting this new virus, Covid-19. Additionally, it discusses a set of structures for TVET protection in the coming days, as well as strategies for mitigating covid-19 effects. The economic position of TVET and

its operation in industry are extensively discussed. The purpose of this article is to provide stakeholders, including governments, and institutions dealing with the TVET educational crisis with a realistic picture of the situation. Along with the foregoing information, the article also details the strategies that the Malaysian government has been implementing to ensure the smooth operation of TVET during this pandemic.

2.0. TVET Education System

In this era where Technical and Vocational Training (TVET) is no longer a new concept for the education system, TVET education is practised around the world with different terminologies for instance, workers' education (WE), workforce development (WD), work education (OE) and apprenticeship programmes, occupational and technical education (CTE) but the core purposes remains unchanged i.e. training the highly qualified prospective of jobs for employment. TVET is a skill-based approach in order to train the employees for the jobs and businesses (Subedi, 2012). Whereas, UNESCO-UNEVOC; an international TVET centre describes TVET as, accumulation of knowledge and skills in order to work (Ramamuruthy, Alias & DeWitt 2021). The primary function of TVET is to develop human capital, which is a critical factor in economic growth and development in global industries, and thus requires the advancement of TVET learning (Azizan, Pangil & Zin, 2021).

Today's TVET institutions serve as an invaluable resource for skilled personnel. Although the image of TVET as a secondary school has shifted to that of a major technical school, global initiatives are required to excel further in terms of new policies, implementation, and control (Franken, 2020). Additionally, it can be stated that the management and creation of TVET, TVET curriculum, teacher formation, pedagogical obstacles, TVET creativity, and stakeholders are pertinent and are related to public and private participation in the advancement of the contemporary TVET management system (Hamdan, Yunos, Lai, Ibrahim & Munastiwi, 2021). Thus, the TVET initiatives therefore must align to meet the skills of the 21st centuries economic paradigms. It may also include the skills like logical thinking and cognitive and non-cognitive competencies for instance critical thinking, problem solving, teamwork, entrepreneurship, effective communication and many more (Wing, 2016).

However, TVET education is not limited to organisations or schools; rather, it can be combined with the environment or the eco-system in order to facilitate networking opportunities between them (Rawal, Jubayer, Choudhury, Islam & Abdullah, 2021). Collaboration with members of learning institutions and members of the community who are concerned to work and collaborate for the constructive work and matches the mission and objectives of the TVET could be possible, for example, the outcome of skilled workers and the markets of the TVET which are essential for economic growth could be possible (Mokhtar, 2017).

3.0. Global Effects of COVID-19 on TVET

Contemporary, almost all the students around the globe are affected and face education challenges for a year, due to the closure of the schools, TVET educations and universities (Hoftijzer, Levin, Santos & Weber, 2020). The education system currently is being done remotely via internet, TV, mobile phones, however the TVET education which is learned outside of typical classroom is suffering owing to the internet issues, lack of electricity supply, lack of availability of the technology, unprepared teachers, whereas, female students face the challenges in juggling between household duties and studies. Adjusting and implementing this education system in such conditions during pandemic especially among the low-income and vulnerable students, is extremely difficult and challenging.

The TVET has a hallmark of focus in the practical skills and work readiness it makes the remote learning challenging, they are practical based learning education which can be effectively learned via performing in schools, workshops or laboratories with the hands-on experience of training or attachment at the workplace (Munyi, Okinda & Wambua, 2021). Remote learning approach is difficult to be taught for the practical exercises where the

usage of the equipment is mandatory i.e. heavy machinery, which are usually not found at home (Chinengundu, 2021). In other context, in some of the occupations the practical training could be simulated remotely for instance, augmented reality experiences virtually but again the cost of acquiring complex and advanced software which can run such simulations, can be a hindrance to most students. The most struggle is with the adjustment with the distant learning which are heavily dependent on learning by doing (Odanga, Omuterema & Oteki, 2021). Whereas, the academic programs and subjects are easier to be implemented online but the process of automation and mechanics can only be learned by on hand teaching methods. For the TVET programmes the silver lining is that the work-based skills can be continued in the workplaces which are open. Some measurements are required to be followed in order to learn the practical trainings to be allowed. For the adequate connections of the programs work-based learning can be run smoothly via virtual internships offering ((Hamdan, Yunos, Lai, Ibrahim & Munastiwi, 2021).

4.0. TVET's Response to COVID-19.

TVET is plays an important role in the Covid-19 pandemic, which is spreading across the world (Daniel, 2020). As summarised in table 1.1, it makes a significant contribution in three stages, namely, i.e. the coping phase, the second is intermediate phase in which the businesses and the schools are gradually reopening and then we have the third phase which is said to be the recovery period where the changes in the structure will take place in education as well as in the job markets.

The intermediate phase has started where the activities are resuming on a slow pace as the schools and institutions are reopening gradually and TVET now can play a supporting role in this transitional period known as the "New Normal" (Chinengundu, 2021). The lifting of the lockdown in several countries across the world but with strict health and social protocols undertaken for the health and security purposes. Further the contributions and guidelines are summarised in the table 1.1.

1-Coping Phase Outbreak of COVID-19	• Immediate response • By coping phase, we mean actions which were taken in lieu of a better situation. • Tvet immediately responded by providing online learning materials and resources to supplement efforts and replace traditional modes of content delivery. Virtual classes were phased out in favour of in-person instruction and work placements for TVET students (UNESCO, 2020). • TVET institutions were actively involved in the manufacturing of protective equipment and other supplies such as sanitizers and masks, which was an excellent application of the production school concept within the community (World Health Organization Interim Guidance, 2020). • TVET schools around the world helped in a massive awareness campaign. The network of UNESCO-UNEVOC which is composed by over 250 UNEVOC centres in more than 160 countries helped in raise awareness to targetted groups. The World Federation of Colleges and Polytechnics, through its members, also raised awareness.
Intermediate Phase-Current Situation	• Mid-Term Response • According to ILO data (2018), Europe accounts for 32% of the world's current 164 million migrant workforce, followed by North America and Arab States. Depending on the extent to which the pandemic has a long-term impact on business, TVET institutions will be critical in addressing unemployment and re-skilling local displaced workers as well as returning migrant workers in order to capitalise on the next wave of employment opportunity. A concerted effort should be made to initiate mid-term projections for employment, guidance, and counselling (Ariyanti & Jannah, 2020). • TVET has to be critically active in supporting community-based solutions and strengthening of local industries during this phase(Freitas & DeBoer, 2021). • These are solutions that require medium-term policy strategy: 1-Community/ or Medical Kiosks, also called "telemedicine kiosk, 2-Expansion of facilities that use renewable energy, 3-Flexible work-based learning, 4-Creating online platforms and virtual simulator training content (Ghavifekr & Yulin, 2021).
Recovery Phase Post-COVID-19	• Long Term response or the preparations that TVET systems could make. • To combat the after comings of this pandemic, TVET can collaborate with big organisations and provide solutions of unemployability. • For instance, the UNESCO will be launching the Global Skills Academy which aims to equip over one million youngsters and will help the people with employability and resilience skills in the time of recession and crisis (UNESCO, 2020). • The teaching schools, management, students and teachers will be looking forward to finding a flexible way to repair the damages that has been caused by the global pandemic. In this regard the schools were reopened in India and New Zealand, Universities which were operating during the time of pandemic had offered the different courses and schedules/flexible hours , in an open environment which tends not halting the learning activities during this time. (Hayashi, Garcia & Jayasundara, 2021) • The tertiary education has expanded the online learning capacity throughout the world and systematically have moulded the learning patterns according to the need of the world on technological based learning methods and techniques. Majority of the institutions have found there way in this new changing trend in the time of crisis (Ansorger, 2021). • TVET can play a supporting role in the training that is required by the professionals in the healthcare sectors and in othersectors like childcare professionals, caretakers (working for the elders and in the elderly homes) along with that TVET trainings can also be provided to the students which will be re-joining schools , universities with post pandemic depressions and providing help in coping the conditions (Bhattarai, 2020). • The government must improve cyber security to protect computers, electronic systems, and networks (Chong, 2020). To protect the personal information of both students and employees, the government must enact policies governing technology security and ethics.

Table 1.1: Phases of TVET COVID-19 Response

5.0. Approaches to remote TVET learning

The approaches to the learning are clearly different for TVET as the learning process is characterised by practical work. Whereas, the other academic learning of the elementary/primary, tertiary is non-technical.

The TVET graduates play the major role in the economic sector of the world, the practical training for the academics can be done via distant learning methods but for the TVET educations requires more attention (Mutambanengwe & Dambudzo, 2021). Until the time when the countries around the world are prepared to return to the normal trade and economic activities the restrictions for the health measurement will be imposed. Going back to the normal activities is not as simple as it seems, the new normal activities with strict health protocols are to be learned and practiced (Chinengundu, 2021). The health management system will constantly be evaluated and the necessary precautions will be strictly implemented. The ways and solutions will be looked by the teachers, students and institutions in order to repair the damages which are caused by this global pandemic (Hira et al., 2020). The new health parameters need to be formulated in order to allow the opening of learning institutions worldwide.

6.0. The Economic Position of TVET in Malaysia.

The idea of vocational education transformation was introduced in the year 2012 has proven fruitful since many have utilised the skills and learning in their future orientations (Hayashi et al., 2021). The Technical and Vocational Education and Training (TVET) graduates have successfully joined Malaysian workforce every year. Malaysia's education system aims to help children find the right educational path and develop 21st century skills. As a result, students were offered appealing academic, technical, vocational, religious, sports, and artistic options (Ministry of Education Malaysia, 2013). The Malaysian Education Blueprint 2015-2025 aims to treat Technical and Vocational Education (TVET) equally with academic pathways.

This pathway was created to increase student access to science and technology education at various institutions. So students can become skilled and semi-skilled workers to meet local industry needs. There are a number of state and private skills development centres in Malaysia that offer TVET certificates, diplomas, and degrees (Aziz et al., 2020). TVET is critical in supplying k-workers to the labour market. Malaysian government has thus consistently supported TVET, most notably through the establishment of industrial training institutes, national youth skills institutes, national skills institutes and private skills training institutes. Malaysia currently has 87 vocational colleges, 357 vocational schools, 26 technical schools, nine technical schools, and four vocational schools (Krishnan, 2020).

7.0. TVET's Response in Malaysia

Since late 2019, the COVID-19 pandemic has affected millions of people's health, killed many, disrupted education and training, and threatened economies worldwide, including Malaysia (Hassan, 2020). As a result, the Malaysian government issued the Movement Control Order (MCO), which forced the Malaysian education system to adopt online learning. During the COVID-19 pandemic, the Sri Lankan government mandated online and distance learning for TVET instructors and students (Hayashi et al., 2021). Thus, online teaching and learning is the only option available in Malaysia during MCO too (Sufian et al., 2020).

There are many standards or models in Learning Management Systems (LMS) that focus on the cognitive domain, but no guidelines for designing effective LSM for TVET in Malaysia. Although instructors and students favoured ICT adoption. Some instructors struggle to incorporate ICT into the classroom because they prefer traditional teaching methods (Munyi et al., 2021). Online learning may also be hampered by lack of learning facilities. Despite students' commitment to MOOCs, lack of internet coverage at Malaysian polytechnics is cited by Zulkifli et al. (2020). Technology, infrastructure, and human resource development, as well as management, economic, and policy considerations, are listed as primary barriers by Yasak and Alias (2015). In contrast to that, the effectiveness of online learning's pedagogical and assessment methods is rarely debated (Nasir, 2020). With current educational practises and technological advancements, other forms of online learning integration must also be considered (Nasir et al., 2018). Because traditional teaching and learning methods, such as technical and hands-on skills, are more important to TVET students than online learning, all parties face numerous issues and challenges.

The Malaysian government has taken the initiative to provide 1 GB of free internet per day for online teaching and learning via selected telco companies across the MCO (Ating, 2020), the data provided may not be sufficient to fully implement e-learning. Governments should expand Internet access in rural areas by providing affordable remote satellite Internet access (Jalli, 2020). While this is the right direction to take, it has been complemented by the availability of affordable and reliable Internet packages and expanded coverage throughout Malaysia (Chong, 2020). Simultaneously, the government should take the lead by providing necessary e-learning tools such as computers, printers, broadband networks, and smartphones. Governments could establish a "affordable device programme" by offering special incentives to qualified members of the community in order to ensure that all families have at least one compatible device for e-learning (Jalli, 2020). To compensate for the inability of some households to purchase these gadgets, the government also launched the Kelas@Rumah programme, a daily television show available on a free-to-view television channel (Ating, 2020). Regrettably, this programme was geared toward primary and secondary school students and not toward TVET students. However, in China, a team of TVET teachers has been formed to develop online courses that will be delivered via a variety of platforms, including a new TV channel dedicated to TVET, with the goal of improving the quality of emergency remote teaching (UNESCO, 2020).

Youth unemployment is still high and has become the largest contributor to Malaysia's unemployment problem. This unemployment problem is caused by an inability to compete, skill mismatches, a lack of job opportunities, a lack of experience, a lack of job choices, a lack of soft skills, competition from foreign workers and immigrants, and a negative attitude toward local workers (Abd Samad et al., 2019; Manshor et al., 2020). The government must take drastic measures to ensure that youths have jobs soon after completing their studies, such as giving youths priority over foreign workers when filling jobs. Another way is to strengthen the relationship between education and employment as the first step toward strengthening TVET (Özer, 2020). The government's primary objective should be to strengthen collaboration between the public and private sectors in support of the Vocational Education Transformation Plan (Ministry of Education Malaysia, 2013). This is supported by UNESCO (2020), which states that the government should foster collaboration between educational institutions, industry, and community organisations in order to gain a better understanding of the skill requirements for learners transitioning into employment and self-employment. The current crisis has highlighted a new opportunity for the TVET system and its learners to collaborate on product and service design in certain fields, such as manufacturing protective equipment and other supplies for use in health facilities.

8.0. Conclusion

Technical Vocational Education and Training (TVET) is a critical driver of Malaysia's education system transformation and contributes to economic growth. Its mission is to develop and equip individuals with current technical skills that are in demand in the workplace. Numerous challenges confronted the government in its efforts to strengthen the field of Technical and Vocational Education grew worse when the COVID-19 pandemic changed the way education is delivered from traditional methods to e-learning. Thus, the primary objective of this review paper is to shed light on the issues surrounding TVET education and the challenges it faced during the COVID-19 pandemic. This paper has provided some considerations for those responsible for planning and governing TVET: The pandemic situation and its consequences should be factored into the development of TVET approaches and risk management studies. Strengthening the capacity development of TVET teachers to deal with pandemic situations is necessary. Transformation of TVET for sustainable development should be a primary objective of future TVET work. Massive public awareness campaigns are required to emphasise the importance of hygiene and healthy practises among all stakeholders.

Strengthening the teachers' capacity for developing online education, ethical and moral values, and global citizenship, is critical to make learning effective. Students should be provided with learner-centered, self-directed tools for

independent learning. As opportunities present themselves, TVET institutions can serve as role models for implementing greening strategies. Additionally, TVET systems are strategically positioned to consider multiple time horizons when planning their actions, including short-term (immediate), medium-term, and long-term actions. In the short term, TVET systems should recognise their vast technical knowledge and, in some cases, well-equipped facilities that can be used to assist those in need. It is a moral imperative that they immediately begin analysing what they can do and taking action. The choices made by TVET institutions, individuals, and governments will shape the world in the future. It will alter not only the health care system, but also the way we think, act, and socialise in the future for a sustainable economy, social cohesion, and environmental integration.

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