Issues and Challenges of Technical and Vocational Education and Training in Malaysia Towards Human Capital Development

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Abstract: To become a high-income economy, skilled workforce is vital. Under the concept of Human Capital Development (HCD), it is vital to provide effective training and education especially in technical and vocational education. The injection of education acquisition to the trainees will increase the performance, productivity and capability which translates into a good investment. As a result, it is important to increase the enrolment in Technical and Vocational Education and Training (TVET) and raise the overall training quality since TVET has become crucial in these recent years for industries and the economy as a whole. This paper will discuss the overview and the course of TVET in Malaysia. The main thrust of this paper is to highlight the challenges that overlay the implementation of TVET in Malaysia. Hence, the development of Knowledge Worker (K-worker) and human capital will be realized.

Key words: Knowledge and technical skills  •  Technical and vocational education and training  •  K-worker  •  Human capital development

INTRODUCTION

Human Capital Development (HCD) highlights the quality of workers as the key factor in a sustainable organization. Therefore, having identified labor as the most important factor of production and HCD as an important lighthouse that beacon on the importance of labor in optimum productivity, then the study or constant review of the theory of Human Capital Development theory is a necessary task [1, 2]. Intervention of Human Resource Development (HRD) is derived from the model of HCD. There is no doubt that education is very significant in HCD. It guarantees a vivid future of people in the country's development. Efforts made by the government in providing effective education system is very beneficial to the development of knowledgeable citizen. This includes Technical and Vocational Education that was identified by the government as the contributor to the economic growth principally from high-tech industry and technical sector. The government, in adaptation to the changes in this economically challenged world, is required to design a better plan in providing effective education to the people so that in turn they will contribute to the country for a better environment.

Economic Transformation in Malaysia: Conventionally, labor demand and supply have been growing annually at 2 percent rate. With the introduction of the National Key Economic Areas (NKEAs), demand for labor is expected to outgrow supply. By 2020, up to an additional 3.3 million jobs will be created, of which 1.3 million will be TVET-related. However, based on historical trends, it may be challenging for the current TVET sector to meet the demands of a high-income economy. Malaysia aspires to move up the value chain to become a high-income economy, with a GNI (Growth National Income) per capita of approximately USD 15,000 by 2020 [3]. To realize this ambitious goal, the Malaysian GDP (Growth Domestic Product) will have to grow at an average rate of 6 percent per annum until 2020. Malaysia will need to have a workforce that is equipped with the necessary skills and knowledge to support and drive the economy.
The economy will require a larger workforce. NKEAs that are expected to create up to an additional 3.3 million jobs will accommodate of approximately 1.3 million (40%) of TVET-related jobs by 2020 [4].

It is important to ensure the economy has suitably-skilled human capital. While the twelve NKEA sectors project a need for 1.3 million TVET graduates, thus 1.6 million TVET graduates are required by 2020. Current capacity of TVET institutes reveals that it is insufficient to meet the needs of economic transformation. Concluding from current rates of graduation, of the 1.6 million required TVET graduates, institutes are able to fulfill only 1.2 million. This leaves a supply-demand gap of 400,000 graduates until 2020. The number of students that chose TVET in Malaysia keeps increasing by years. Based on data from Manpower Department [5] as in Figure 1, the total of intakes in Malaysian Public Skills Training Institutes is increasing since 2001 although there are drops in a few years due to institutions’ budget and quota constraint. But still, the graph shows positive increments in student participation.

Malaysian Advanced Technology Training Centers (ADTEC) offer Diploma and Advanced Diploma qualification. It is equivalent to Level 4 and 5 of Malaysian Skills Certification. Entrance into Malaysian Advanced Technology Training Center requires a minimum of pass in Malaysian Certificate of Education (MCE) with 3 credits. At the end of their studies, an industrial based project must be completed as one of the competency assessment to determine their qualification for Diploma or Advanced Diploma. During this process, the students sometimes find difficulties in many aspects for every project stage. They need support and assistance especially from their supervisor to guide them through the studies.

Meanwhile, the number of certificates awarded has declined or leveled off across the board. Moreover, the number of graduates at higher levels (Levels 4 and 5) is low, with only 1,500 graduates in 2009. At this rate, the 10th Malaysia Plan's target of achieving 50 percent highly-skilled workforce by 2020 and the ETP's (Economic Transformation Program) requirement of 1.3 million TVET graduates will be difficult to meet, severely hampering the nation’s ambitions of becoming a high-income economy [4].

Knowledge Workers (K-Workers): The demand for engineers and engineering assistants keeps increasing from 153,000 in the year 1994 to 500,000 in the year 2008 [6]. In the year 2010, the country will need more than 500,000 engineering technicians and engineers [7]. This figure keeps increasing since then. In 2010, Malaysia has a workforce of about 12 million, of which only about 28 percent are highly-skilled, whilst 60 percent are employed in small and medium-sized enterprises [8]. In this year 2013, registered engineers in Malaysia have reached to 80,107 engineers including 10,901 professional engineers [9].

To meet the need for manpower, the government has put in place a lot of emphasis on technical and vocational education and training to produce more Knowledge workers (K-workers). K-worker occupational competences comprise of technical competences, learning competences and methodology competences [10]. Coherence from this issue, government can create a pool of skilled workers that can handle the rapidly changing world of work. The global changes in technology and particularly in the Malaysian industries have created a major need for skilled workforce and comprehensive training [11].

Overview of TVET System in Malaysia: TVET seems new to certain people in Malaysia since the exposure related to this system is still not properly explained. The effort to promote TVET is on the rise for the past years after the Prime Minister has put the skills training as one of the main agenda in Malaysian Budget 2011 and 2012. In general, TVET provision in Malaysia is still largely concentrated on lower-level skills qualification whereby more than 70 percent of graduates are at Malaysian Skills Certificates, Levels 1 and 2 [12]. Although TVET Institutions are running at high operating levels, many are not yet operating at full capacity. The overall funding structure also does not fully support quality and performance of TVET providers. There are many TVET providers in Malaysia either from public or private institutions. Most of the higher levels of skills qualification (Level 4 and 5) are being conducted by Public Institutions with Government support. The institutions under the Ministry of Human Resource and Development for instance are providing 5 active institutions for conducting these higher levels namely Advanced Technology Training Center (ADTEC) and Japanese Malaysia Technical Institutes (JMTI) across the country.

Diploma and Advanced Diploma that are equivalent to Malaysian Skills Certification at Level 4 and 5 merely required a trainer to successfully complete the training courses and an industrial based project as one of the competency assessment. The duration for Diploma program will take 3 years and 9 months including 1 year of
Certificate program while Advanced Diploma program will take 1 and half year. Through the accreditation from MQA (Malaysian Qualification Accreditation), the students are eligible for articulation program to enroll in Malaysian Technical University Network (MTUN) for Degree program.

**Current Issues with TVET in Malaysia:** While the Malaysian government works the transformation of the economy towards the vision 2020, the demand for K-Workers is increasing as a direct result. This goal can be achieved by developing human capital by providing TVET provision. Nevertheless, it is a challenging objective because of the lack of participation in technical and vocational streams. Consequently, there is a huge opportunity for TVET providers to attract school-leavers to take up TVET. In addition, more than 100,000 school-leavers join the labour market annually, after 11 years of formal schooling without pursuing further education or training [12].

According to Zain [13] there are numerous TVET providers in Malaysia which are: (1) Ministry of Education (TVET is offered in secondary schools called technical or vocational secondary schools); (2) Ministry of Higher Education (TVET is offered in polytechnics and community colleges); (3) Ministry of Human Resource and Development (where the Department of Skills Development, National Vocational Training Council (NVTC) and Industrial Training Institutes are placed); (4) Ministry of Youth and Sports (where the National Youth Skills Institute is placed); (5) Ministry of Community Development; (6) State governments (where institutions such as Skills Training Centers, etc. are placed); and (7) Private providers - for example Institut Kemahiran MARA and Pusat Giat MARA. There are also other prominent providers like the Universiti Kuala Lumpur (UniKL), German-Malaysia Institute and British-Malaysia Institute. In 2005, there were 21 Industrial Training Institutes (ITI), 14 National Youth Skills Institutes (NYSI), three Advanced Technology Institutes (ADTEC) and 162 Pusat Giat MARA (skills training institutes under the MARA). All of these offer a variety of training and vocational-type of education [14].

TVET in Malaysia seems to be the last resort for less qualified students for academic option. In addition, TVET-based qualifications and careers are still poorly perceived and recognized in the workplace. Many employers do not recognize the certification due to the highly fragmented landscape, with many ministries and agencies issuing certifications. As being explained before, TVET provision in Malaysia is overseen by many different ministries, agencies and organizations, both public and private. The various TVET providers often operate as silos and do not take into account program offerings in the broader context, resulting in overlapping courses and institutions as well as creating confusion for students and employers. The main issue reported by the industries are the lack of product quality and skills possessed by the students. Although the system is fundamentally designed to meet observed or projected labor market demands, the current TVET programs in Malaysia are largely supply-driven and with less emphasis to matching training to available jobs. The overall funding structure also does not fully support quality and performance of TVET providers [12].

**Findings-Key Disputes and Challenges in TVET:** This paper brings together the most obvious problems and the hidden issues regarding the TVET system and structure with the primary aim to encourage the new perspectives of TVET implementation in Malaysia. The similar challenges in TVET reported were regarding the mindset and public perception [15, 12]. The public especially the parents does not have confidence in the prospect offered by TVET for their children's future and profession. Pang [12] and Zain [13] also discussed about the various TVET provider that comes to the issue of certification and demand supply-mismatch. Other important challenges are related to curriculum [15] and the quality of TVET providers [12]. The summarization of the issues and challenges can be studied from Table 1.

**CONCLUSION**

Training that takes place in technical and vocational education need to be consistent with the industry. This is important to ensure that Human Capital Development focuses on developing K-workers. Organization should give them support and adequate training in terms of skills and knowledge in order to develop excellent human capital. The challenges in TVET however can be tackled by positive approach through the innovation and enhancement of the system. The solutions projected in this paper can be further discussed comprehensively. One of the examples of efforts is through the National Dual Training System (NDTS), that was implemented since 2005 to expose apprentices to actual situations in the industry. Apart from technical competencies, the
Table 1: Summary of Issues and Challenges in Malaysian TVET

<table>
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<tr>
<th>Issue</th>
<th>Description</th>
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<tr>
<td>Curriculum and multiplicity of provision, certification, standard.</td>
<td>Curriculum is the pillar of TVET training. TVET provision in Malaysia is undertaken by different ministries, agencies and organizations, both public and private, with a multiplicity of certification, standards and curricula. Various systems applied by TVET providers often resulting in overlapping of courses and institutions as well as creating confusion for students and employers.</td>
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<td>Mind-set and poor perception and recognition of TVET</td>
<td>Pang [12] discussed that TVET in Malaysia has always been considered by the public at large and parents as the career choice for the less academically-qualified with the impression that TVET caters for school drop-outs, rather than as an important strategy to train skilled workers. Many employers do not recognize the certification. It is supported by Zain [13] where she stated that too much attention and resources is given to ‘academic’ rather than vocational education. The same goes to the recognition and career.</td>
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<td>High cost of technical education.</td>
<td>The budget to set up a course is so high and should consider the maintenance for the equipment. It’s not only covers the machine but also the learning material that is used one-off.</td>
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<td>Weak monitoring and evaluation and Demand-Supply Mismatch</td>
<td>The current TVET programs in Malaysia are largely supply-driven and still lack of matching training to available jobs. Zain [13] also reported that there is demand-supply mismatch, which in part contribute to unfilled employment vacancies in the industry. There is obviously a need to improve links between schools and the industry so as to minimize this mismatch.</td>
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<td>Lacking in efficiency and quality.</td>
<td>In general, TVET provision in Malaysia is still largely concentrated on lower-level skills qualification whereby more than 70 percent of graduates are at Malaysian Skills Certificates, Levels 1, 2 and 3. Although TVET Institutions are running at high operating levels, many are not yet operating at full capacity. Promotion should be highlighted and the training focus should be more concentrated on higher-level.</td>
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<td>Non-Homogeneous Participation of Ethnic Groups</td>
<td>Another issue faced by Malaysian TVET is that of comparative participation of all ethnic groups in TVET. Malaysia being of multi-ethnic composition with three major races namely Malay, Chinese and Indian, it is imperative that every ethnic group is fairly represented in this system. Thiruselvam [14] reported that Indian youths make up less than 3 percent of the total intake to TVET places offered in the country. The overall participation is dominated by Malays.</td>
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<td>Attrition and Completion issue</td>
<td>Attrition rates and completion rates of students is becoming a statistical vital concern in Malaysian TVET. Although the numbers are not significantly large, but they still need to be considered. There are students that fail to graduate in time given while others drop out completely. This indicates the need to improve completion rates. The issue of quality and the supervisory system should be taken into account.</td>
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Source: Majumdar [15]; Pang [12]; Zain [13].

NDTS also emphasizes human and social competencies. The Human Resource Development Fund that was introduced in 1993 aims to provide accelerated industrial training and offer enormous opportunities and avenues for companies, industry associations and public/private industrial training institutions to contribute to more responsive and relevant skill development. Transformation should be made based on TVET models from developed countries such as Germany, Hong Kong, Japan (the polytechnic university system) and Australia. The mutual ground for these models is that of the major weight on practical-oriented approach. Hence, the inspiration to develop K-Worker will definitely be accomplished.

REFERENCES

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