

## Empowering Technical and Vocational Education and Training (TVET)

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### Abstract

Technical and Vocational Education and Training (TVET) is not a new matter within our country's education system. TVET was established to meet the current industry demands in order to make Malaysia an advanced nation. Strengthening TVET will contribute to the country's economic growth by producing skilled workers in various high-demand fields. The direction of Technical and Vocational Education is also included in the Malaysia Education Development Plan 2013-2025, as part of the fourth wave. Several challenges in Technical and Vocational Education and Training have been identified, including the management of training institutions, which encompasses curriculum understanding, physical facilities, and financial resources. It is important to prioritize these aspects to bridge the gap between TVET graduates and the industries offering job opportunities. The government has entrusted two different agencies with overseeing the implementation of TVET in Malaysia, namely the Department of Skills Development (DSD) and the Malaysian Qualifications Agency (MQA). Proactive steps to improve the TVET ecosystem align with the 12th Malaysia Plan and meet the requirements outlined in the People-Centric Economic Model under the classification of Education and Human Resources Renewal.

**Keywords:** Technical and Vocational Education, 12th Malaysia Plan (RMK-12), Government Initiatives, Education Gap.

### Introduction

Technical and Vocational Education and Training (TVET) has been deeply rooted in the global education system for a long time. According to Alias et al (2018), TVET traces its origins back to World War II. To become a developed nation, we need to cultivate a substantial number of

industry experts within our country. This serves as an alternative to avoid dependency on foreign expertise. TVET education has the potential to stimulate the overall economy of the nation and local communities. Fundamentally, education serves as a platform for the delivery of knowledge and the development of skills, which are cultivated through various methods, including formal, non-formal, and informal, as highlighted by (Idris et al., 2018). In Malaysia, the first perspective (1) is related to educational development, while the second perspective (2) associates education with the construction of societal civilization. Technical and Vocational Education and Training (TVET) in Malaysia involves various ministries, agencies, and Industry Lead Bodies (ILBs) appointed by the Department of Skills Development (JPK) under the Ministry of Human Resources. They continuously strive to certify skill education for anyone interested, regardless of their background. In Malaysia, the skill certification curriculum follows the National Occupational Skill Standards (NOSS), which are overseen by the Department of Skills Development (JPK). The curriculum contained within NOSS aligns with the current industry job requirements, ensuring that the outcomes of the teaching and learning process meet the needs of the workforce.

### **Empowering Technical and Vocational Education**

Educational institutions serve as platforms used to enhance skills and produce skilled workers who contribute to the country's economy. According to Dobbs and Madagavkar (2014) in their study, there are constraints from the industry regarding hiring employees. Their research found that students from higher and secondary education institutions still lack the competence to meet current job requirements. According to Ali et al (2018), defining graduate marketability is a significant element in explaining the importance of Technical and Vocational Education and Training (TVET). They also stated that this issue has become a global debate among scholars to refine the importance and implications for the education system and graduate marketability. The role of educators in implementing assessments based on established curricula is a matter of concern for those who will accredit skill certifications. The question is, to what extent can these assessments be carried out? Are the curricula learned in line with current industry requirements? What efforts are being made by administrators and institutions to strengthen TVET in line with current job demands? According to Teong et al (2022), the professional ethics, attitude, and personality of a teacher also have an impact on their daily tasks as an educator.

A teacher who is genuinely interested in promoting Technical and Vocational Education and Training (TVET) will provide opportunities and positive influence on students who are interested in skill training from an early stage, preparing them for the future job market. This is because students are already prepared to work using the skills they have acquired from as early as the lower secondary level. In relation to this, it can be linked to the findings of Dobbs and Madagavkar (2014), which state that the current industry relies on the latest technology. Clearly, suppose students are exposed to vocational and skills education from the school level with a strong foundation in basic education. In that case, it will provide added value, and students will be better equipped to adapt to technological changes when they enter the workforce later on. The Education Development Blueprint 2013-2025, which focuses on educational institutions under the administration of the Ministry of Education (KPM), in Chapter 7, under the dimension of system structure, clearly outlines the educational pathways and career options in its sub-dimension. It can be deduced that from the early stages of

education, students need to be nurtured based on their interests and aspirations. This will assist them when they reach the secondary level to pursue specialized schooling to fulfill their dreams. Empowering TVET education requires continuous commitment from various stakeholders and is closely related to all levels of education in Malaysia. The components within technical and vocational education also involve elements of academic education to enhance the current TVET curriculum practices. The Education Development Blueprint 2013-2025 has clearly stated a ratio of 70% in technical skills and 30% in academic learning. This is important as it reduces the gap in competency among skilled graduates from institutions under KPM.

### **The Instructional Leadership Model, Taba Model (1962), and Stakes Countenance Model in shaping skill training**

Industry-based education can have a positive impact on students in skill-based fields. The process of delivering skills and disseminating knowledge should involve effective theories and models. The 21st century has shown that there is a constant demand for human resources that keeps changing, in line with the rapid use of technology, which involves a skilled workforce. According to Tabron and Yang (1997), each time there is technological advancement in developed countries, there is a high demand for human resources skilled in implementing the latest technology. The impact of this rapid technological advancement is closely related to the development of knowledge and skill levels. Additionally, it can be linked to the demand for a workforce with competencies aligned with current technology usage. Educational institutions that aim to produce skilled workers in the future need to be led by leaders who are always ready to face challenges and understand the goals and directions of the organization. The Instructional Leadership Model among institutional leaders can be used as an instrument in governing educational institutions that provide skill certification. A positive educational planning and development climate will have an impact on instructional leadership exhibited by the management of an organization.

According to Weber (1996), five (5) dimensions lead to instructional leadership theory. It defines several dimensions, which are (1) The organization needs to define the mission of the institution, which is to understand and be clear about the direction of a school organization. The second (2) is aimed at PdPc planning, it can be further understood by referring to the organization having to be responsible for managing the curriculum as well as learning and facilitation (PdPc). Weber also defines the third dimension (3) as promoting a positive learning atmosphere and the fourth (4) is from the point of view of PdPc observation that is implemented to ensure that it becomes a facilitator during the learning session, and the fifth (5) is the evaluation of the program that is carried out is it facilitate the implementation of learning in the institution.

The government has taken the initiative to increase the number of TVET institutions to produce highly skilled workers. Therefore, it is appropriate for every leader in TVET institutions to use the Instructional Leadership Model to lead their organization to achieve the goal of producing experts in the TVET field, at the same time it helps the government to produce skilled workers in the future. In addition to the Instructional Leadership Model, TVET institutions can also utilize the Taba Model (1962) as an approach to strengthen TVET education. According to Ornstein and Hunkin (1999), the development of a foundational curriculum that starts from the grassroots should be built by teachers. It is not appropriate to

start from leaders and then move to students. This is a grassroots approach that is directly conveyed by teachers to students. Taba explained that the beginning of an educational process starts in the classroom, and teachers have a better understanding of the curriculum needed to educate students. Taba (1962) outlined five guidelines in curriculum development for use by educational institutions to remain relevant. Generate small units of instruction using seven steps: diagnosing student needs, setting objectives, selecting content, organizing content, choosing learning experiences, arranging learning activities, and determining what to evaluate through assessment. Experiment with the units created. Review and make improvements. Review the scope and sequence of the program. Utilize and disseminate the learning outcomes. The Taba Model (1962) emphasizes curriculum assessment for the enhancement of academic processes itself.

A good curriculum will yield good outcomes. This model clearly states that only teachers who are actively involved in teaching are qualified to develop the curriculum because the teaching sessions will be conducted by teachers themselves. The Stakes Countenance Model can also be related to TVET education. This model is better known as the Contingency Congruence Assessment Model. It is a process for assessing the current curriculum. In summary, the connection between these three models involves leadership. The Instructional Leadership Model, the Taba Model (1962), aligns with the development of TVET education curriculum, and the Stakes Countenance Model is referred to as the suitable model for assessing the developed TVET curriculum. To strengthen TVET institutions, all stakeholders must play a crucial role, aligning with government requirements and policies. Additionally, leadership teams and implementation groups are vital in collaborating to help the government produce a skilled workforce for the advancement of the country's economy.

### **The Importance of Empowering Technical and Vocational Education (Quality, Education Policy)**

Empowering TVET involves not only the Ministry of Education but also the participation of other agencies and ministries. In the 2020 budget presentation, the government allocated RM 5.9 billion specifically for Technical and Vocational Education and Training (TVET) programs. The funding allocated to TVET institutions also involves collaboration between the industry and public education institutions. According to Zamri (2007), skills can be defined as abilities, competencies, and knowledge used in the technical and vocational sectors, closely related to psychomotor, cognitive, and resource utilization. In implementing TVET education in Malaysia, the Department of Skills Development (JPK, 2012) has emphasized the importance of developing and assessing students' competencies as a critical element in TVET. It is essential to produce graduates who meet the competency levels required by industries to ensure their employability in the future. According to Rothwell and Arnold (2007), the quality expected by employers is a crucial asset that impacts an organization. They also state that the quality of work exhibited is a determinant of educational institution achievement. To meet industry demands, curriculum development and assessment in every agency that produces TVET graduates need to be aligned. According to Ross (2000), the underlying curriculum of TVET education should have a clear focus on achieving mastery in a specific skill area.

### **Role of Each Ministry**

In Malaysia, several ministries provide technical and vocational training to individuals of various age groups. With the slogan "Lifelong Learning," individuals can access the education

they desire regardless of their background. In 2009, the government established the National Blue Ocean Strategy (NBOS) program, aiming to streamline all agencies under the government. It also aimed to enhance the delivery of information from the government to the people. This program involved various methods of collaboration, including the use of infrastructure, training, and human resources from each relevant agency. For example, TVET institutions under the Ministry of Youth and Sports and TVET institutions under the Ministry of Human Resources were part of this initiative. Each ministry is responsible for ensuring that the communities under their jurisdiction receive proper education in the implementation of TVET. The allocated funds should be used for providing facilities and enhancing the skills of the educators. Additionally, institutions that offer TVET programs need to be knowledgeable about the Skills Certification offered in their respective fields.

### **Role of Technical and Vocational Education Institutions**

A conducive infrastructure is essential within TVET institutions. The use of state-of-the-art equipment and skilled human resources are also crucial elements in training a skilled workforce. The Malaysian Education Development Plan (PPPM) 2013-2025 has stipulated that every student should have access to education to reach their full potential for the future. This is in line with the advancement of technology. In other words, the Ministry of Education Malaysia (KPM) has established that every student should be given access to education even if they are not physically present at school. Various methods are used to generate knowledge in various subjects within the education system in Malaysia. The success of vocational programs has been evident since the establishment of the Industrial Training and National Craftsmanship Certification Board (LLPIP) in 1971, which was later restructured and became the National Vocational Training Council (MLVK) in 1989, before eventually transforming into the Department of Skills Development under the Ministry of Human Resources. The Department of Skills Development (JPK), the Construction Industry Development Board (CIDB), the Malaysia Qualification Agency (MQA), the Malaysia Board of Technologists (MBOT), and Tenaga Nasional Berhad (TNB) are among the key skill certification bodies in Malaysia that align with current job industry requirements. Institutions that train in skills development should adopt curricula recognized by these certification bodies. They need to follow the guidelines for implementation and provide competent human resources or instructors to produce a skilled workforce in the future. Institutions are also encouraged to establish partnerships with private companies or specific corporations, depending on the skill programs offered by the institution.

### **Role Of The Community In Helping The Implementation Of Technical And Vocational Education**

Empowering TVET should begin within educational institutions. It involves the process of educating and understanding the importance of TVET from the early stages, through secondary education, and onward to higher education (Jeffri et al., 2018). When there is a lack of knowledge about the current industry conditions, it can hinder the learning process in the classroom. This is the result of administrators and educators not being aware of the current industry needs. Creating a positive image of TVET educational institutions also requires the involvement of parents and the community to have an economic impact on future trainees. According to Lingard et al (2003); Starrat (2003), they explain the role of leaders in establishing



a professional learning community (PLC), where educators continuously strive to improve their skills and competencies. This is their responsibility in the tasks assigned to them.

In every educational institution, there are associations involving guardians, heirs, and parents. The leaders of each association should emphasize the importance of TVET education to their children. In the Ministry of Education, there is undoubtedly a Parent-Teacher Association. The leaders of these associations can engage and mobilize their members to be more aware of TVET developments. According to Harris (2013, 2014), leadership is a form of behavior that can persuade community members and organizations to work together on something. Leadership is also crucial in the development of a country, organization, and society. This is because leadership structure can be linked to the success and effectiveness of an organization or community, as noted by (Shahril, 2001; Kouzes and Posner, 2003). Therefore, community leaders must always contribute to the TVET empowerment agenda, as we will produce skilled workers who will contribute to and support the local economy. Our country will not escape from disasters stemming from floods, forests, and more. As seen in Kelantan in 2014, having skilled workers can help local residents repair damage caused by disasters. This is part of the outcome of TVET education. We can solve problems quickly without waiting for assistance from external parties. To realize the desire to establish a relationship between the community and TVET institutions, the ministry should also organize various programs that require community involvement.

### **Problems And Constraints In Technical And Vocational Education**

TVET education in Malaysia follows its own implementation guidelines. The guidelines for TVET in Malaysia are based on those issued by the Department of Skills Development (JPK). JPK has developed the National Occupational Skills Standards (NOSS), which industry experts have refined according to specific skill areas. The NOSS issued by JPK also align with the current job requirements desired by employers. Additionally, JPK has established the National Dual Training System (SLDN). This system aims to provide recognition to workers in the industry who have expertise in their field to certify the results of their industry experience. JPK (2016) has outlined specific competencies that individuals need to achieve to obtain the Malaysia Skills Certificate Level 1 to the Malaysia Advanced Skills Diploma Level 5. The implementation of TVET education also faces the main challenge of curriculum mismatch between the current industry job requirements and the established curriculum guidelines. The curriculum underlying TVET education changes every five years. The rapid development of technology necessitates the need for curriculum programs to change quickly. Yunos et al. (2006) have explained seven principles within the framework of the Malaysia Skills Certification. These principles include (1) providing technical and career development training that aligns with academic-based certification, (2) emphasizing lifelong learning skills and technical skill enhancement, (3) emphasizing the production of highly competent and certified workers, (4) adding value to existing TVET implementations to improve the quality of knowledge and skills, (5) providing a training platform that includes both public and private institutions, and (6) enhancing the corporate image of TVET and the status of skilled workers. JPK (2011) reported that the development of NOSS is progressing rapidly in line with technological advancements, but the number of agencies implementing it remains minimal. In summary, the concept of implementing NOSS is proactive, but its implementation at the grassroots level is still limited.

All parties need to be aware of the need for NOSS to produce more skilled workers in the future.

**Implementation Issues and How To Overcome The Constraints of TVET Education** The promotion strategy to expand learning opportunities in TVET and disseminate TVET education should start with educational institutions. Ministries should also allocate the available financial resources to intensify promotion efforts related to the importance of TVET. Additionally, research on opportunities and the job market for TVET graduates should be intensified. A curriculum framework that supports Teaching and Learning (PdPC) leading to employability is also crucial. The Ministry of Education has emphasized that TVET education involves the integration of technical and academic education. There is also a need to streamline the TVET curriculum. This is due to the diversity of programs being implemented simultaneously. The government should continuously collaborate with industries that provide current job opportunities to understand job requirements when trainees enter the workforce in the future. The existence of apprenticeship programs like SLDN involving training institutions and employers is a positive impact on skill development. This provides trainees with a real-world work environment.

Every ministry also has a national agenda to empower TVET. The Ministry of Youth and Sports has set target groups for learning TVET, which includes youths aged not exceeding 40 years old and youths from families with income below the B40 range. These youths will be trained in skills based on their interests in designated institutions. The programs organized will be conducted by trained instructors. To ensure that the trained youths remain relevant to the job market, the responsible Minister has instructed the curriculum of TVET to be realigned according to the latest industry requirements. It is clear that this is a way to address the mismatch between the institutions and the current job requirements in the industry. TVET is often associated with financial allocation for equipment maintenance at institutions for trainees' use. To address this issue, regular equipment maintenance should be carried out to ensure that all equipment used is always in good and safe working condition. Regular maintenance can also prevent equipment from breaking down quickly. Damaged equipment would force educational institutions to purchase new equipment, but with regular maintenance, it can save funds for repurchasing equipment in the future. Industry-based curriculum and sustainable TVET are topics that are often discussed, and they encompass teaching and learning and the involvement of skills from the industry (Mighat and Yasin, 2010). Financial resources are the most crucial aspect of infrastructure development at educational institutions. The process of building and improving skilled equipment takes a considerable amount of time. Furthermore, with the rapid pace of current technology, the use of the latest technology is also necessary. A suggestion to address this issue is to involve private agencies and Government Link Companies (GLCs) to work together with educational institutions in providing infrastructure resources that align with current industry needs.

### **Positive and Negative Impact of TVET Education to Ministries, Institutions And Policy Implementation**

Society needs to be prepared for the transformation of education in our country. When a country has a large number of skilled workers, the unemployment rate will decrease, the economy will grow, and the currency value will increase. The country can also control the

outflow of its currency. This is because Malaysians will no longer need to seek employment abroad. Technical and vocational education and training (TVET) also contribute to success through the employability rate of graduates. This implication clearly impacts the implementation of policies and training methods by educational institutions. The needs of employers are also among the elements considered by the government in shaping the concept of technical and vocational teaching and learning. This results in more skilled industrial experts being produced to meet the current human resource demands. Furthermore, it reduces the reliance on foreign labor.

Na'eim et al (2018) state that in their study, two main aspects that the government pays attention to concerning foreign workers are economic and safety. The implementation of TVET in Malaysia is not a new thing. It is a unique and planned educational revolution, but it also requires continuous improvements that align with the employability of current skill graduates. The initial stages in the technical and vocational field had negative implications initially due to the difficulty in performing technical tasks. The impact of this situation led the government to make changes in developing the TVET curriculum. Positive implications for TVET education include the production of skilled workers with critical thinking and high-level thinking skills. Financial implications can be both positive and negative in the implementation of new things in a country. The rapid pace of technology involves the addition of new and advanced equipment that requires experts to train instructors in educational institutions. Certainly, this training will require a high financial allocation. However, this can be overcome in two or three years once the trained output can disseminate the knowledge they have learned. The curriculum structure also has positive and negative implications. For example, TVET will involve the sharing of experience and expertise. There will be suggestions from the industry requesting TVET training centers to perform tasks and use equipment similar to the industry's current standards.

However, on the training provider's side, they are bound by financial resources and experts to train students who will work in the industry in the future. This leads to two main gaps: the implementation gap of assessment and evaluation and the communication gap to reach a consensus on the standardized curriculum for use by institution trainees. It is important to remember that TVET education is national and needs to be aligned in its implementation across all institutions. Financial allocation for different institutions makes it challenging for each institution to provide equipment for the skills programs they run. The rapid pace of current technology also has a positive impact. It involves making all work easy and quick, saving time. In the future, skilled trainers in technology can work from home. Trainees who learn technical skills are also able to earn high incomes with the ICT applications they have learned in TVET institutions. Negative implications may be limited, but workers who work from home and engage in full-time ICT work will be confined to their own world, potentially creating a communication gap. Health factors may also decline as the focus is entirely on technology use. Work-life balance is crucial to produce individuals who will advance the country and make Malaysia a fast-growing nation with high moral values among its people.

## **Conclusion**

Realizing competent workers to obtain employment is the responsibility of educational institutions. It also involves providing competent academic staff. Fundamentally, every educator should understand industry-based curriculum first. The main goal of TVET is to



produce competent workers in line with industry requirements, as emphasized by (Burganova and Valeev, 2015). The Malaysia Education Development Plan 2013-2025 is currently in its third wave in 2023. The emphasis on an industry-based curriculum is a fundamental pillar in preparing students to meet industry needs. Instructors also need to act as facilitators in the learning process. Institutions should establish industry partnerships or Memoranda of Understanding (MoU) with the private sector to create a relationship or skills partnership in specific technologies. TVET education has the potential to boost the country's economy and impact communities. TVET learning is based on current industry needs. In summary, the foundation for strengthening TVET begins with training institutions that provide infrastructure, training, and competent instructors to realize the aspiration of making Malaysia an advanced nation.

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### **References**

- Idris, A. R., Ahmad, H., Hussin, S., Ghavifekr, S., Ibrahim, M. S. (2018). Analisis Strategik Dasar Pendidikan: Universiti Malaya.
- Burganova, and Valeev. (2015) The Formation of Social and Communicative Competence pedagogical Experience
- Dobbs, R., & Madgavkar, A. (2014). The world at work : Matching Skills and jobs in Asia. Prospects, 44, pp. 197-210.
- Jabatan Pembangunan Kemahiran (JPK). (2011). Tahap Penggunaan NOSS. Putrajaya. Kementerian Sumber Manusia
- Jabatan Pembangunan Kemahiran (JPK). (2016). National Occupational Skills Standart (NOSS)Division.Retrievedfrom
- Kementerian Pendidikan Malaysia. (2012). Pelan Pembangunan Pendidikan Malaysia 20132025: Laporan Awal. Putrajaya.
- Lingard, B., Hayes, D., Mills, M., & Christie, P. (2003). Leading Learning : Making Hope Practical in School. Open University Press: Maidenlead
- Minghat, A. D., & Yasin, R. M. (2010). A sustainable framework for Technical and Vocational education in Malaysia. In Procedia - Social and Behavioral Sciences, 9(4), 1233–1237.
- Rothwell, A., and Arnold, J. (2007). Self -perceived employbility: development and validation of a scale. Personel Review,36 (1),pp.23-41

- Weber, J. (1996). Leading the Instructional Programme in Smith SC Piele PK (eds) School Leadership: Handbook for Excellence in Student Learning. USA: ERIC Clearinghouse on Educational Management.
- Sahaat, Z. (2007). Faktor-faktor yang mempengaruhi pembelajaran pelajar khas (cacat pendengaran) dalam mata pelajaran vokasional–Satu tinjauan kes di Sekolah Menengah Pendidikan Khas Vokasional, Seksyen 17, Shah Alam. Disertasi Sarjana Muda, Universiti Teknologi Malaysia.