Themes on issues and challenges of TVET in primary education of Malaysia: A case study in Melaka

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ABSTRACT – Technical Vocational Education and Training (TVET) is widely recognised as a vital driving force for Malaysia's socio-economic growth and technological development. This study investigates the themes of the issues and challenges faced by primary schools in supporting TVET in Malaysia. A qualitative approach of the interpretivism paradigm has been adopted, and Constructivist Grounded Theory employed for data gathering. A semi-structured in-depth interview was conducted with 15 participants directly involved with TVET policies, decision making, and understand about Malaysia TVET and primary education. Five themes were identified: lack of support among stakeholders, insufficient training, ineffectual curricula, inadequate resources, and poor class management.

1. INTRODUCTION

A clear vision is essential to any efforts that humans undertake. It is indeed rights to educational initiatives, which are the fundamental driving force to support children in their early development and growth in many aspects of life [1]. The Ministry of Education of Malaysia launched the National Philosophy of Education (NPE) in 1988 consists of three core components i) integrated education ii) must be balanced and harmony not just student but a 'complete person' iii) counts on intellectual, physical, emotional, and spiritual aspects of the 'holistic person.' These elements in NPE are very much related to 21st-century education and have even become necessary to be imparted and integrated into an individual's life since primary education and have been laid out in Malaysia Education Blueprint 2015-2025 [2]. However, due to certain factors, primary education in Malaysia constantly faces many issues and challenges in ensuring success in the TVET agenda.

1.1 Historical background of TVET in Malaysia

The origin of TVET in Malaysia begins in 1926 where Trade School was founded in Kuala Lumpur to provide business education to young people. In 1930, the school was developed in Ipoh, Johor Baharu, and Penang. After independence, TVET, articulated from the First Malaysia Plan 1965-1970 to the 12th Malaysia Plan 2021-2025, was a major source of concern for the government [3]. Many high schools in vocational education have been built since First Malaysia Plan. The key task of vocational schools is to provide the agriculture, factories, and business sectors with qualified technicians, craftsmen, and workers desperately required in the economic system [4].

According to the Economic Planning Unit, with the implementation of the National Key Economic Area (NKEA), demand for labour in the TVET sector is estimated to rise [5]. NKEA will need up to 3.3 million staff by 2020 and 1.3 million TVET students. The focused sectors are tourism, retail, more remarkable Kuala Lumpur development, healthcare, and education [6]. Nonetheless, the estimated growth in labour supply is 2% a year. If the government does not take any concrete steps on labour supply, it will not fulfil the needs forecast at 350,000 labour shortages by 2020 [7]. Based on these demands, this research has examined the primary education concerns and obstacles in promoting TVET and analyse how existing primary education affects the national TVET strategy to satisfy the needs of industrial revolution 4.0.

1.2 Primary Education

Primary education aims to assist a child in many aspects of life. It is crucial to support a child from many angles at an early age. According to [8], to strive to reach high values, meet the challenges caused by high-tech evolutions, and develop nationality about fundamental values and critical thinking should begin from primary education.

Education in Malaysia consists of five stages of learning: Pre-school Education, Primary Education, Secondary Education, Tertiary Education, and Post-graduate education. Primary education consists of six years of schooling that is referred to as Year 1 to Year 6, which begins at six years old and ends at 12 years old. At the primary education stage, the student must undergo the UPSR (*Ujian Penilaian Sekolah Rendah*) that includes Bahasa Melayu, English Language, Science, and Mathematics [9]. The first six years of school life are vital to achieving these skills. Therefore, a quality curriculum structure in primary education should fulfil the needs to attain these objectives.

2. METHODOLOGY

A qualitative approach of the interpretivism paradigm has been adopted for this study. The Constructivist Grounded Theory has been employed for

data gathering. Theoretical Sampling of the Grounded Theory was used to ensure the 15 participants interviewed (Table 1) were those directly involved and understand Malaysia TVET and the primary education system. To ensure ethical consideration for participants of the study, the names of the interviewee coded as follows:

i) Ministry, State and District managers are coded as Senior Education Managers
ii) Teachers are coded as Educators; the pseudo name is assigned to all interviewees traceable only by the researcher.

Table 1: One-on-one discussion information

Sessions	Participants	Coded
One-on-one interview	8	Educator
	5	Senior Education Manager
On-line interview	2	Senior Education Manager
Total	15	

Initially, the faculty deans were notified of this study, and once their approval was given, the selection of participants was made. Later, they were contacted via phone, e-mail, or in person. The participants were provided with an approval/consent letter (to ensure the participants approve of themselves being in the discussion, which also explains the interview). A semi-structured in-depth interview was conducted in person with 13 participants, and 2 of the participants were interviewed virtually via WebEx online due to the pandemic and social distancing reasons. The researcher set up the recording and photograph the session during and after the interview session. The discussions were recorded with a voice recorder with permission from participants as agreed in the consent letter earlier. In addition, they were also provided with verbal and written information regarding the study—subsequently, memoing procedures of Grounded Theory were completed by researchers immediately after each interview session. Later the audio was transcribed verbatim to a complete transcript. Finally, the transcripts were uploaded in ATLAS.ti 9 software to analyse the data and elicit the themes of the issues and challenges of primary schools in supporting TVET in Malaysia. As a token of appreciation, gifts were given to acknowledge participants' time and contributions to the study.

Usage of the qualitative method allowed the researcher to dig deep into the context through the experiences and insights from parties directly involved in the decision-making and implementers and providers of TVET in the Malaysian education context. Additionally, primary literature, such as documents from the Ministry of Education also been analysed. Since there is scarce research on the issues and challenges of primary education in supporting TVET in Malaysia, the use of Grounded Theory Constructivist allows the study to investigate the issues and challenges of primary education and the impact on the National TVET agenda through theory-building after collecting data, analysing them, and letting themes emerge inductively. In accordance, the data/results of this study are expected to aid in setting the course for improvements in primary education to meet the national TVET agenda. Therefore, emergent themes/theories are anticipated to provide insights that will support Malaysia's TVET agenda from the primary education perspective that could prepare students for adequate TVET preparation to meet 4.0 industrial revolution needs in the future.

3. RESULTS

The result revealed five themes of issues and challenges faced at the primary school level in setting up a clear foundation to support TVET in Malaysia. The identified themes are insufficient training, lack of support among stakeholders, ineffectual curricula, inadequate resources, and poor class management. The most challenging issues that have been highlighted among the participants were insufficient training. Teachers struggled to equip themselves with knowledge and skills to teach pupils in schools due to a lack of expertise and specialisation, specifically in the RBT subject. Although they did not have the background of the skills, they are pushed to teach by school administrators to overcome the inadequacy of teachers to be responsible for subjects and classes at the primary school level. Hence, these matters overwhelming the teachers because no training or short courses are given to upskill their performances and upgrade their knowledge concerning the field they must fulfil in school.

The second theme displaying the necessities an educator should possess in school. Inadequate resources were the second issue highlighted. Lack of funding, demotivated teachers to run activities or programs planned earlier. TVET related subjects in primary school, for instance, Design Technological Design (RBT), the allocation (PCG) needs to review thoroughly by the Ministry of Education (MoE). The given funding is merely enough to purchase lower-cost material, tools, and equipment, which will subsequently trigger dangers and make an inefficiency in teaching and learning. Most of the facilities, such as broken chairs, tables, and damaged tools in the RBT workshop, need replacement too. In addition, some were poorly managed and often needed maintenance which cost the school. Apparatus such as 3D pens, glue sticks, glue guns, solar fan, sponge fabric, controller set, and micro electromagnet set are frequently needed by pupils for projects and activities. They are quite expensive with limited funding by MoE school reluctant to purchase and seek help from parents and community to implement the projects, especially for RBT subject. The consequence is that the item purchased is less in quantity due to limited budget. Therefore, pupils need to share the apparatus during the lesson. Some pupils left out became passengers, not

focusing during the class as they disowned the tools and sulking away due to their friends not wanting them to share the tools. In conclusion, an ineffective lesson will be taken place throughout the year without notice.

Ineffective curricula were another issue found as a third theme in the study. Most of the participants claimed the main subject related to TVET in primary schools of Malaysia is Technological Design which is known as RBT in Bahasa Melayu. In addition, some participants stated there are also other subjects across the curriculum that could also be linked to TVET, such as Science, Mathematics, Arts Education, and Physical Education. To sum up, the mentioned subjects somehow supporting each other and benefit the pupils at the primary education level. However, there were some setbacks while executing the syllabus since the RBT subject was introduced in 2014 till the present. It seemed RBT resembled high standard and needed few alterations in terms of contents and topics for pupils in Year 4, 5, and 6. A topic such as Scratch Programme in Year 4 is quite challenging for teachers to teach and comprehend the pupils during a lesson.

Furthermore, few topics were taken out after the Revised Standard of Technological Design subject in 2017 *(KSSR Semakan RBT)* whereby relatively essential knowledge and skills to be imparted in pupils learning for future needs. Besides, RBT is seen as an elective subject that does not appear in the UPSR exam slip. Thus, school administrators, teachers, parents, and pupils mistreating the subject even though it is vital and linked to TVET, our national agenda. Likewise, the time allocated by MoE for the RBT subject in the primary school timetable is given only an hour per week to conduct the projects and activities, which is quite challenging. As a result, teachers rushed to complete the syllabus and failed to accomplish the tasks as planned due to time constraints. Likewise, bound with an exam-oriented education system, stakeholders and the primary school community display more importance and interest in UPSR subjects merely to gain popularity by achieving excellent results every year raising their school's name.

The fourth theme is about lacking support among stakeholders, which involve teachers, head schools, parents, community, non-government organisation (NGO), industries, Technical Institutions, District Educational Offices, the State Educational Department, and the Ministry of Education. Networking and collaboration among the stakeholders are essential to achieve the goal of one organisation. However, participants disclosed there was no support given explicitly for the subject related to TVET in primary school, such as RBT, if any activity or program was being carried out. Most of them were overlooked and never showed interest in assisting when needed funds and assistance to implement primary school projects. Since RBT is not an exam subject, biases and double standards could be seen among the stakeholders towards the RBT subject.

The last theme touches on poor class management issues. Teachers failed to control the pupils because RBT lessons usually comprise projects and involve more physical movement activities. Moreover, the lesson involves tools and unknown materials which considered dangerous for pupils in primary schools. Hence, safety measurement needs to be taken to keep away pupils from any risks. Having no assistant teacher to help with projects during the lesson, plus being surrounded by unknown apparatus, could be a disaster for the whole task at a time. In addition, dealing with 40 pupils during the activities with various mischievous behaviours could worsen even after the subject teacher takes the safety measurement. Table 2 depicts the total number of participants who spoke on each respective theme by session.

Table 2: Total participants for each theme of the issues and challenges faced

Participant	Themes				
	Lack of support among stakeholders	**Insufficient training**	**Ineffectual curricula**	**Inadequate resources**	**Poor class management**
1	/	/	/	/	/
2	/	/	/	/	/
3		/	/	/	/
4		/	/	/	/
5		/		/	
6	/	/	/	/	/
7		/	/	/	/
8	/	/	/	/	/
9	/	/	/	/	/
10	/	/	/	/	/
11		/		/	/
12	/	/	/	/	
13	/	/	/	/	
14	/		/		/
15	/	/	/	/	/
Total	**10**	**14**	**13**	**14**	**12**

Table 3 presents the descriptive words and terms that participants associated with the themes of primary school issues and challenges in supporting TVET Malaysia. During the interview, the participants identified issues and challenges faced by a primary school in supporting TVET in Malaysia, using different words and phrases, as portrayed above. It could be noted that the themes of ineffectual curricula and lack of support among stakeholders were described positively and negatively, signifying concerns and issues highlighted by the participants. The significant opinion in an ineffectual curriculum of TVET related subjects has had a positive and negative impact. The theme 'lack of support among the stakeholders' mainly concerned a disparity in Senior Education Managers and Educators.

Table 3: Words associated with the themes of issues and challenges of primary school in supporting TVET Malaysia

Insufficient Training	Lack of specialisation, short courses, meeting, PLC, training, upskill, upgrade knowledge, teacher's initiative, inexpert, non-option, conversion, SKM Level 2, significant, exposure, demanding, advance, inexperience, guidelines
Lack Of Support Among Stakeholders	Cooperation, round table, networking, industrial and NGO's involvement, school head's mentality, teacher's attitude, failure, administration, interest, opportunity, ignorance, community, unaware, supervision, mismanaged data, circular, exposure, misleading information, meeting, collaboration,
Ineffectual Curricula	High standard, achievable, exam-oriented, less time allocation, timetable, biased, content, amendment, revised curriculum, skills, lack of confidence, basic knowledge, incomplete projects, TVET related subject, industrial 4.0, national agenda, Technological Design (RBT), subject across the curriculum
Inadequate Resources	Allocation, funding (PCG), lab assistant, equipment, materials, expensive, inadequate facilities, no maintenance, sharing, ineffective lesson, procedures, purchasing items, supplier
Poor Class Management	Inconducive, danger, risks, safety measurement, huge class, enrolment, class control, lab assistant, demotivated child, projects, and activities, RBT workshop, passengers, group work, tools, sharing

3.1 Theoretical Framework

Based on the revealed themes on the issues and challenges faced by primary schools to support TVET in Malaysia, a theoretical model (Figure 1) has been built, indicating the relationship among them. It contains lack of resources, ineffective curricular, poor class management, lack of support among stakeholders and insufficient training.

Figure 1: Theoretical framework of issues and challenges in primary schools of Malaysia

4. CONCLUSION

In conclusion, the study has successfully uncovered five themes of the issues and challenges in primary education that affected the execution of the teaching and learning specific subjects related to TVET known as Technological Design (RBT) in the primary school of Malaysia. It should be noted that the issues and the shortcomings need to be addressed immediately to achieve the nation's aspiration. Therefore, preparing primary education to have a strong foundation, assisting, and supporting from the bottom level of education is vital. Hence, primary education plays a crucial role in cultivating the interest and motivating pupils to be creative, innovative, and wise decision-makers at an early age to meet the demands of IR 4.0 needs in the future. In addition, producing holistic and good capital from a young age could lead to a success story in one organisation's productivity. Hence, the stakeholders must pay close attention and find ways to improve the challenges and the needs as it contributes significantly to primary education and TVET in Malaysia.

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