Technical and vocational Education Sustainable Development
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ABSTRACT
Technical and Vocational Education (TVE) play an important role in shaping human labor so can meet the job market in the industry. Ministry of Education (MOE) has identified the importance of TVE to ensure the country's aspiration to become a developed country by 2020 is achieved. The transformation TVE which are being implemented by the Ministry of Education should be supported by all parties involved. While transformation efforts to upgrade the vocational schools and vocational colleges restructuring subject vocational secondary schools implemented, the strategy of sustainable development in the TVE should be given attention accordingly. There are seven strategies of sustainable development that has been introduced by (UNEVOC) to be discussed in this paper to help mainstream the program TVE in the country. Seven strategies have been outlined by the International Center for Technical and Vocational Education and Training (UNEVOC) will be discussed, namely: (i) Support and the country's vision, (ii) Support to investigate the state police TVE, (iii) Guidelines for planning and implementation, (iv) Capacity building and training programs, (v) Support the development of materials, resources and learning equipment, (vi) Relationships and partners in TVE, and (vii) monitoring, evaluation and research continues.

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environment. Education for sustainable development enables people to develop the knowledge, values and skills to take part in the decision on how we are doing something, either alone or "Collectively", locally or globally, which will improve the quality of life for now without damaging the planet in the future.

Next Hopkins (2005) suggests that while the whole world recognizes the importance of education in achieving sustainable development, but until now rather limited achievements. United Nations University (UNU) and the Institute of Advanced Studies (IAS), the European Network of the UNESCO, International Forum on Education for Sustainable Development, Beijing has held discussions and forums but implementation Education for sustainable development is quite slow. The education system in most countries do not activities that lead teaching attention to the key issues of sustainable development.

A study conducted by the UN Economic Commission for Europe (UNECE) in 2006, has identified a number of issues and constraints in the implementation of education for sustainable development. Among them are lack of understanding of the concept of sustainable development, does not understand the purpose of education to sustainable development, not enough provisions to carry out projects related to education for sustainable development. In addition, the lack of support and the role played by other bodies, whether governmental or non-governmental organizations and the media to education for sustainability development affects teachers and administrators understand the meaning of ESD itself. In education similarly vocational ESD not as widely understood.

Another survey was conducted by Pavlova (2004; 2006a) and Pavlova & Lèbeame (2004) in France, Australia and Russia to get the teachers' perception of technology on sustainability including issues sustainability in the syllabus technology. Results of the study found that teachers are not technology engage in education for sustainable development. Most teachers and pre-service teachers who are currently teaching in the three countries that do not have good knowledge about the purpose of sustainable development or education for sustainable development. Accordingly Pavlova (2008) suggests that a guide to implement the concept of education for sustainability development through the process of teaching and learning by teachers realized. Each skill has been studied also in line with The study is being conducted by researchers in this study, which covers all aspects of the thoughts, emotions and physical fitness for generating a teenager who is superior (Ahmad Esa et al., 2015) Sustainable Development Strategy for Technical and Vocational Education

The Bonn Declaration (2004) said sustainable development (Sustainable Development) to Technical and Vocational Education and Training (TVEL) must provide an employee with knowledge, competencies, skills, values and attitude to produce a citizen who responsible and productive always appreciate the goodness of the work performed and the next produce a sustainable society. Apart from the sustainable development of the TVE should be renewed an individual's skills, research on the labor market, sensitive to the conditions of a skills and transformation of the world of work. Among the requirements that must exist in every employees is k-worker, generic skills or soft skills, re-training (re-training), continuous learning, the role of workers in communities, development of skills, committed and motivated, k-economy and constantly critical and problem solving. In the Malaysian context, to achieving Vision 2020 needs more knowledge workers or k-worker

In addition to knowledge workers, educators in the field of TVE also need to have knowledge and high proficiency in the subject matter. This is necessary so that a teacher was more confident in teaching TVE in the workshop and impact on student learning (Izlin Zuriani 2002). Therefore, reorienting TVEL for sustainable development needs to be done. It's not just limited to course content and curriculum development but include all TVEL system. This includes some aspects such as implementation, policy development, administration, training of teachers and provision (UNESCO-UNEVOC 2004b). In addition, some TVEL sustainability strategy to be outlined by the UNEVOC studied to ensure sustainable development in the TVE can be performed well. Seven strategies UNEVOC is outlined; (I) support and vision of the country, (ii) Support for policy review TVE countries, (iii) Guidelines for planning and implementation, (iv) Capacity building and training programs, (v) Support the development of materials, resources and learning equipment, (vi) Liaise and partner TVE, and (vii) monitoring, evaluation and research continues.

State Support and Vision

National vision is to become an industrialized country by 2020 as which was inspired by Malaysia’s fourth Prime Minister, Tun Dr. Mahathir Mohamad. In connection with the Division of Technical and Vocational Education (TVE) has outlined three main roles for support the national vision is: (i) ensure the implementation and progress of technical and vocational education at the school level in the country, (ii) provide an opportunity for students who tend to technical and vocational education and reduce student dropout problem, and (iii) provide equal opportunities for technical and vocational education to all students. To support the policy or national vision, Ahmad Tajuddin (2009) has outlined a number of initiatives for technical education and vocational training by the Ministry of Education. Among these are: (i) improve the quality of TVE, (ii) strengthen the Another curriculum TVE, (iii) improve relationships with industry and professional bodies, (iv) increase student participation in school to vocational-technical schools, and (v) expanding and restructuring MPV.

The first provision of the guidelines the Tenth Malaysia Plan, 2011-2015, which affect prospects economic and strategic direction of the country has been issued by the Secretariat of the Tenth Malaysia Plan (RMK 10), Economic Planning Unit, Prime Minister's Department, Malaysia in early September 2009. To prepare human capital, creative, innovative and skilled 21st century has become a theme towards achieving the plan economic prospects and strategic direction of the country. In 26 cases, technical and vocational education or known as TVE also been touched and given emphasis by the government to provide human capital countries versatility. Quotes 26 items are as follows:

To complement the needs of skilled labor, concerted efforts need to be introduced to make a paradigm shift in society towards technical and vocational education (TVE). Accordingly, the flow of TVE must be synchronized with the existing primary school flow and enhanced with technology and applications learning the latest teaching methods. These efforts should be supported by introducing standards and systems accreditation of skills to improve career prospects for skilled workers.
According to Najib, M. (2010), in developed countries the technical education and vocational training to be among the favorites primary students because it provides good career prospects. By contrast, in Germany it is seen as the last option because the perception of limited career prospects. Negative assumptions must be rejected. Education Technical and vocational training is actually providing a good alternative substrate for students realize their potential. 100,000 SPM holders, or 22 percent of entering the job market each year without skills training. To enable them to get technical education and vocational training, technical education facilities and vocational training and further enhanced mainstreaming TVE in order to become a high income nation.

Tenth Malaysia Plan (10MP) for the period 2011 to 2015 shows a change significant system TVE di Malaysia. Cultivation of ideas and strategies based on the achievement and improvement of the country outside, Korea and German into a high-income nation, Malaysia has become a model for continue to move forward and be competitive on the world stage. To work with a more holistic approach in first class human capital formation is a priority to one embodiment of Malaysia as a high-income countries and respected (Aminuddin, 2011). It is clear that the Malaysian government has always support for technical and vocational education in order to achieve the country's vision. Therefore sustainability sustainable development in terms of implementation at all levels should be emphasized that strategic plans and prospects of the national economy reached.

**Support to Review National Policy TVE**

Parts Technical and Vocational Education (TVE), the Education Ministry has set a target 50% of students in secondary schools will take vocational subjects. According to Director BTVE, this will have a major impact on developing nations in particular delivery of skilled and semi-skilled countries. Some improvements to the subjects vocational training has been drafted and will be taken seriously in order to give support to the police state TVE. Additional Tajuddin, A. (2009), an estimated 250,000 students will take vocational subjects per year by 1250 SMK X 20 students in each school. Dropout problem that occurs in the country will also be overcome if the action is carried out.

The Malaysian government is currently reducing dependence on foreign labor. Additional Tajuddin A. (2009), with the expansion of vocational subjects in vocational many more skilled workers will can be produced to support national policies and economic growth. The country will benefit especially of time and costs if the Ministry of Education to train and produce students who MPV to take NOSS (National Occupational Skill Standard) level 2 (17 years) and the next NOSS is level 3-5 in skills training centers immediately after completing grade five lessons. This means that at age 20 or within three years through training in a skills institute will have at least 250,000 skilled workers each cohort.

Malaysia aims to increase the economic value chain to make income economy height. Therefore, enrollment in TVE should be increased and enhanced the overall quality of training to improve the skill level of the workforce. In connection with that desire within 10MP four strategy was outlined to mainstream and expand access to TVE as follows; i. improving perception of TVE and attract more students ii. Developing teaching more effective TVE iii. Improve and harmonize the quality of TVE curriculum in line with the needs of the industry; and iv. Streamlining delivery TVE.

Support for national TVE policies as outlined in the 10MP is one thing TVE to be in the mainstream of the country. For this purpose, emphasis should be given to increase the value and attractiveness of TVE students, training providers and industry. The government will do media campaign at the national level continued to raise awareness and improve the perception against TVE. The main target group of potential students and their parents. This is a very positive effort and seriousness the Malaysian government to attract more students to TVE pursue their studies at various levels are available.

**Guidelines for the Planning and Execution**

Strengthening human capital is one thing contained in the Ninth Malaysia Plan (9MP). It is contained in the second core to enhance the capacity for knowledge and innovation and nurture 'First Class Mentality'. Quality human capital is the most critical element in achieving the National Mission. Therefore, the development of human capital has become a key thrust in 9MP period. Human capital development will be implemented holistically, including the acquisition of knowledge or intellectual capital and skills including entrepreneurial capabilities and knowledge of science and technology (S & T) and has a positive attitude and ethical values and progressive through education, training and learning throughout life. The implementation of lifelong learning programs was emphasized in chapter 11 of the 9MP such as the passage below:

The implementation of lifelong learning programs will be enhanced to promote increased skills among all levels of society. Education and training delivery system will be expanded and enhanced, particularly in technical and vocational fields. Articulation is an important feature in The era of education and training which provides benefits and opportunities to study a wide someone capable of continuing studies (Rashid, R. and Nasir, M., 2003). Articulation in education and training means the existence of 'routes' or pathways that permit a graduate of a course or program of study whether continuous or not, and through various forms of progress. articulation involves two matter which career path and the path of study that will be traversed by a student.

Therefore each particular program in TVE should now have the elements and characteristics provide and support the articulation. This is very important and should be an important feature in education and training such as TVE because it can inspire or motivate individuals the ability to develop themselves up to the highest potential. However, articulation in TVE in Malaysia does not stand out compared with countries that have been developed. The implementation of vocational subjects (MPV) in secondary schools more meaningful if clear articulation of these subjects in terms of the direction of the students. In addition to the students themselves, parents more confident of the choice made by his son against MPV based on the existing articulation. Thus in plan and determine guidelines MPV in secondary schools should be held articulation element so that goals and objectives of the country's desire to mainstream MPV and TVE will be achieved.

**Capacity Building and Training**

Capacity building and training programs of a program determines the success of a TVE program. Some aspects of this strategy are discussed in this sub-topics such as: i. Skills-based training (SBT)

Skills-based training in the context of the implementation in Malaysia is one approach to vocational training that...
focuses on what individuals can do in the workplace as a result of education and training acquired. In another passage of the skills-based training (Competency based Training-CBT) is "... CB..." In the traditional education system, the training is at a high level. Huang and Xi (2009) says that most countries in the world want to improve the quality of teacher education. In-service training has been identified as a method or strategy for improving the quality of teacher education according to TVE them.

iii. Curricul...
Incorporating various skills will improve individual productivity and production of the company. If in the realm of training have understood the concept of soft skills and already know where and when to apply it then it is not impossible in the future they also know to apply the soft skills that are now a very important skill in line with the development and progress of the country (Ahmad Esa and Mohd Zaid, 2010).

Soft skills are important for competition present and future because most employers need to ensure the continuity of the continuous production of their company. To achieve this, the soft skills among workers needed that all forms are global problems can be solved and the objectives of their skills organizations more easily achieved. In studies that have been done have found the world of work is now not only need to have academic qualifications but also equipped with soft skills so that they can adapted to the new job.

iv. Curriculum development

Sustainability curriculum in technical and vocational education depends on planning, implementation and monitoring of the curriculum itself (Zakaria 2006). There are several factors that need to be considered when designing a curriculum in which TVE that the demand for labor market includes knowledge and skills, skills employability particularly 'hard' and 'soft' skills and results a learning curriculum. Aspects of implementation, a number of factors such as facilities, equipment, materials and resources including instructors and workshop assistants should be given due consideration. The success of a TVE curriculum will eventually be assessed if a student can make something work relating to the areas that have been studied.

The difference in approach to develop curricula for TVE. UNEVOC (1994) issued several guidelines or steps to design and curriculum development TVE. among them is recognizing the need for a curriculum, identify the context and the curriculum, provide data for curriculum development, job and task analysis, planning evaluation curriculum, curriculum content, lesson planning, preparation and carrying out experiments and curriculum the validity of the curriculum.

v. Creativity and innovation

The declaration of 2010 as the year of innovation and creativity is one of the nation's agenda heading towards a developed nation by the year 2020 (Alimuddin 2010). The success of any country in the world at this time many spikes generated by the culture of innovation and creativity among the people of the country concerned. Because In addition, the government launched the Innovative Malaysia 2010 is aimed at moving towards becoming a nation by 2020. According to Muhiddin (2010), the government has done and is doing various efforts to stimulate people seriously in order to make innovation and creativity as well as a cultural practice empowering people towards creative and innovative culture that involves all levels of participation in all areas of society.

MOE efforts to develop creativity among students starting with the implementation of Thinking Skills Critical and Creative (CCTS) across the curriculum since the 1990s. This effort was initiated by introducing Invention subject, in addition to it being a component in the Living Skills subject in school low. At the secondary level technical and vocational subjects already possess creativity implemented through project-based learning and problem solving. However, We will strengthen the development of creativity in line with the globalization era, the era of information explosion and the world without border on the present and the future.

Teachers need to be creative and innovative in order to produce an effective teaching and learning in play a role as a catalyst or a barrier to the downside of globalization and not be victims of globalization. Teaching and learning through creative and innovative teachers, students can acquire knowledge, skills and attitudes and values and can develop their creativity and innovation. According to Hargreaves (2003) in his book Teaching in the Knowledge Society said that education today are in the age of insecurity. In the event that this is not consistent, he said more teachers will play a role either as catalysts or stumbling or victims of globalization because they are unable to keep pace and change. The pupils were creativity must be developed since the early stages of schooling. It aims to enable them to know potential and trends within and triggering the hidden potential within them.

Finally creativity also has implications for the national school curriculum. The second thrust of the PIPP (2006), the development of human capital have expressed a desire to produce students who are competent in science and technology, innovative and creative, and marketability. Thus, creativity is a skill that The emphasis in the curriculum as well as old and new skills to others if we want to achieve and successfully developed nation status in the k-economy (CPC 2010).

vi. Entrepreneurship

In Malaysia the issue of entrepreneurship only grow after the implementation of the New Economic Policy (NEP) in 1970, following a number of positive steps taken by the government to increase Bumiputera participation in commerce and entrepreneurship (Aishah, N. 2002). A string of such education entrepreneurship in secondary schools included in the curriculum of technical and vocational education. Eye integrated life skills lesson (KHB) is part of efforts towards improving education technological and entrepreneurial skills were first introduced in 1991. In parallel with studies conducted by Pavli (2003), KHB as subjects TVE will have an impact and contribute to socio-economic development of the country.

According Norasmah (2002) several measures were taken to increase the number of students has a solid foundation in the fields of entrepreneurship oriented. This includes through subjects Life Skills, Commerce, Principles of Accounting, Economics, Accounting and Economics to meet the needs talent is growing. Similarly for the MPV which aspects of entrepreneurship has been given emphasis in the curriculum of every elective MPV. Studies conducted by Akmal, Z. (2005) entitled "Trends entrepreneurship students: Personality, Interest on Integrated Living Skills (KHB) and Disclosure Teachers About Career Entrepreneurship "found that exposure of career entrepreneurship by KHB teachers is the most influential factor trends entrepreneur career. This showed that teachers play a very important role in providing a student to become a entrepreneurs.

Lope Pihie and Bagheri (2011) conducted a feasibility study related to the teacher entrepreneurial attitudes and analyze the effectiveness of teaching entrepreneurship. Studies conducted the teachers in the field of TVE in secondary technical schools and secondary vocational schools find teachers they have a little knowledge about entrepreneurship. However, teachers' have a positive attitude or attitude future of entrepreneurship and self-confident while...
teaching entrepreneurship. Prior to that, Pihie and Bagheri (2010) pointed out that the attitude towards entrepreneurship and entrepreneurial efficacy are two important factors that affect students and successful become an entrepreneur. Therefore, the application of particular aspects of entrepreneurship in the curriculum subjects TVE and teaching and learning strategies necessary for improving students’ attitude to entrepreneurship and self-efficacy.

**Research, Monitoring and Evaluation of Work**

Research education is important to improve the quality of educational excellence for the realization of national educational goals and make world-class education in Malaysia (Subahan 1998). Therefore research activities should also be addressed and implemented in all levels of the system The state education. Generally educational research can be divided into two research scientific and research actions. According to Jamil (2002), scientific research visits key approach education, research and action is seen as a new alternative in the current research.

In the context of education in Malaysia, the role of educational research is increasingly clear it is headed. It is increasingly recognized and acknowledged that it was time to put the research activities as An important element to achieve the goal of quality education, the democratization of education, lifelong education life, excellence in education, the concept flawlessly (zero-defect) and a world-class education (Subahan 1998). UNEVOC in 2004 had outlined the elements of research and development in sustainability development of technical and vocational education and training. This research shows also emphasized in preserving education, especially in technical and vocational education. Research in other words monitoring and evaluation is also necessary from time to time to determine the status or fix something a benchmarking program.

**Conclusion**

The strategy of sustainable development in the TVE is an important step and should be given to ensure that appropriate attention TVE program can be first in the country. At the time of Similarly, TVE program can be developed in line with current requirements that emphasize sustainable development in education. TVE residents taking part in the efforts to preserve education for TVE sure not to miss in modernization across all corners of the world. Through strategies that have been put forward in this paper, the responsible party should play their role in order to realize and implement the strategy. The strategy is a little as much as it can help those responsible for the guidelines for establishing and next create a transformation in education TVE.

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