

VET CURRICULUM, TEACHING, and LEARNING FOR FUTURE SKILLS REQUIREMENTS

Putu Sudira
Electronic Engineering Education Department, Faculty of Engineering
Yogyakarta State University
Email: putupanji@uny.ac.id

ABSTRACT

VET curriculum, teaching and learning should be adaptive to the conditions and needs of the new world of work, anticipative the future skills requirements, needs of learners as the whole person for personal fulfilment and preparation for life. VET curriculum, teaching and learning should be pay attention to the trend of future world of work, globalization, localization, individualization to make people (self-) employable and to be a vehicle of transition for individuals to the world of work. VET leads to (self-)employment and income generation which is expected to contribute to the individuals' and their communities' well-being. VET implies the adoption of a holistic approach to skills development for employability and citizenship by placing emphasis within skills training programs on developing a basic skills, thinking skills, personal qualities, generic work skills, and specific skills to prepare the learner for self-reliance and responsible citizenship.

Key word: VET, curriculum, teaching, learning, skill

A. Introduction

Fast-changing world of work because of the influence of information and communication technology, labor requirements and the desired characteristics are not easy to predict (Rojewski, 2009; Boutin, Chinien, Moratis, & Baalen, 2009). The international transformation towards a knowledge-driven economy, the strong demands for societal developments, and the international and regional competitions have driven numerous education changes in different parts of the world (Cheng, 2005). It has occurred increasing openness, flexibility, complexity, and uncertainty in industrialized societies (Tessaring, 2009; Heinz, 2009; Billet, 2009; Wagner, 2008). While vocational education and training (VET) curriculum must always adapt to the conditions and needs of the working world. In principle, VET should accommodate all the needs of both the physical needs of learners, non-physical, and moral as well as their future needs to be able to live comfortably and afford to live in society with happy as the whole person (Rojewski, 2009). Dewey believed that the principle goal of public education was to

meet individual needs for personal fulfilment and preparation for life (Rojewski, 2009). Any effective work-based learning system must meet the needs of the learners it serves (Hiniker & Putnam, 2009). What are their needs likely to be? What resources will be needed? What challenges must be met to prepare the workforce of the future for the workplace of the future? How VET should be responsive to the trend and challenges of globalization, localization, and individualization? How curriculum, instruction, and learning were developed to respond to these challenges? According Tessaring (2009), curriculum development requires search for skill and qualification that are 'fit for the future'. How we can be designed and implemented in curricula and education/training routes. How explaining the general purposes of VET, reflecting the underlying beliefs and perspectives of constituents, and shaping current activity and future direction? (Rojewski, 2009).

B. Skill and Qualification For the Future

Functionally VET demanded to equip workers and prospective workers with various skills so that they can complete tasks in a job with a better and true (Gill, Dar, & Fluitman, 2000). According Billet (2009) trend of the future world of work are: (1) non-routine; (2) specialized and diverse; (3) intense; (4) conceptual; (5) discretionary; (6) complex; and (7) based on interactions with others, tools and artefacts. Moving between old world of class rooms and new world of work, there is a core set of survival skills for today's workplace, as well as for lifelong learning and active citizenship (Wagner, 2008). New world of work require seven survival skill (Wagner, 2008) namely: (1) critical thinking and problem solving; (2) collaboration across networks and leading by influence; (3) agility and adaptability; (4) initiative and entrepreneurialism; (5) effective oral and written communication; (6) accessing and analyzing information; (7) curiosity and imagination. We want to develop a new generation of leaders to lead the community in context of complicated technological, economic, social, political, and cultural environments (Cheng, 2005).

According Stern (2003), besides special skills, good workers must have good fundamental skills and generic work skills. Fundamental skill consists of: (1) basic skills; (2) thinking skills; and (3) personal qualities. Basic skills include the skills to listening, reading, writing, speaking, and math. Thinking skills include how to learn,

how to create and solve problems, and decision making. The third fundamental skills is the personal qualities in the form of responsibility, self-integrity, self-confidence, moral, character, and loyalty (Stern, 2005). Theoretically, a good fundamental skills will support career development person. Stern also suggested the importance of generic work skills such as how to use resources, processing information, using technology, understanding the system, in cooperation with others, and work on teams. DeSeCo defined within three-fold categorization and the following nine key competencies as basic skills, life skills, or core competencies and particularly relevant for all individual in Organisation for Economic Co-operation and Development (OECD) countries: (1) Interacting in socially heterogeneous groups covered the ability to relate well to others, the ability to co-operate, and the ability to manage and resolve conflict; (2) Acting autonomously covered the ability to act within the 'big picture', the ability to form and conduct life plans and personal projects, the ability to defend and assert one's rights, interests, limits and needs; (3) Using tools interactively covered the ability to used language, symbols, and text interactively, the ability to used knowledge and information interactively, and the ability to use new technology interactively (Rychen, 2009).

Fundamental skills become the foundation of a person's career development in employment. VET curriculum development, teaching and learning should get enough portion of the fundamental skills. Fundamental skill is a common skills. On top of fundamental skills, there are generic work skills, industry-specific skills, and company/employer specific skills such as Figure 1. Structure development of vocational education and training skills model from Stern (2003) is more structured than the Wagner model (2008).

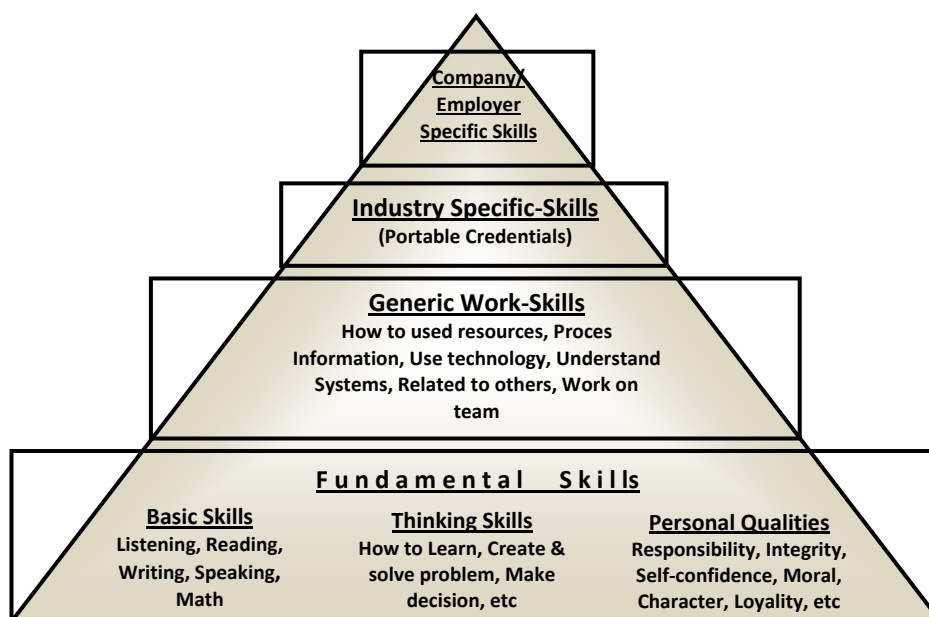


Figure 1. Structure development of vocational education and training skills
 Source: Dr. Barry Stern, 2003.

C. General Purposes Of VET

The purpose of VET is to make people (self-)employable and to be a vehicle of transition for individuals to the world of work. Thus, in the ideal case, VET leads to (self-)employment and income generation which is expected to contribute to the individuals' and their communities' well-being (Hollander & Mar, 2009). VET is concerned with the acquisition of knowledge and skills for the world of work. VET is used as a comprehensive term referring to those aspects of the educational process involving in addition to general education, the study of technologies and related sciences, and the acquisition of fundamental skills, generic work skills, practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (Emmerik, Bekker, & Euwema, 2009; Kellet, Humphrey, & Sleeth, 2009; Stumpf, 2009). VET is further understood to be: (1) an integral part of general education; (2) a means of preparing for occupational fields and for effective participation in the world of work; (3) an aspect of lifelong learning and a preparation for responsible citizenship; (4) an instrument for promoting environmentally sound sustainable development; (5) a method of facilitating poverty alleviation (Hollander & Mar, 2009: p. 41).

For VET to effectively contribute to (self-)employment and poverty alleviation, there needs to be a labour market which can absorb the VET graduates and provide them with decent work and an income that allows them to live. In view of this, the purpose of VET must permit a concentration not only on poverty alleviation but also on (self-)employment (Hollander & Mar, 2009: p. 42-43). UNESCO sees the role of VET as educating the whole person, not just the worker. This implies the adoption of a 'holistic approach to skills development for employability and citizenship by placing emphasis within skills training programmes on developing a sense of values, ethics and attitudes to prepare the learner for self-reliance and responsible citizenship' (Quisumbing & de Leo, 2005; Emmerik, Bekker, & Euwema, 2009; Kellet, Humphrey, & Sleeth, 2009; Stumpf, 2009).

D. VET Curriculum

VET future effectiveness assurance refers to the efforts to ensure the relevant aims, content, practices, and outcomes of education to the future of new generations in new era. The aim of new curriculum should be develop students with multiple development in technological, economic, social, political, cultural, and learning aspect (Cheng, 2005). The design VET curriculum is based on characteristics of technological, economic, social, political, cultural, and learning aspect and maximizing development opportunities for student' individualized, localized, and globalized learning. The curriculum structure is often hybrid, integrative, common core of workforce education for all, and interactive with the support of ICT, networking, local and global exposure, and field experience and virtual reality, to meet the diverse needs of students and the society in the future development. The VET curriculum content includes fundamental skills, generic work skills, life skills, or core competencies, and specific skills.

The curriculum content is relevant to the globalization of technology, economy, social development, political development, culture, and learning. The curriculum also includes local resources, material, and concerns to ensure the local relevance and community involvement for maximizing opportunities for student' localized learning. Community-based curriculum is one typical practice to increase the local relevant and support in the field. The curriculum design and content are flexible and adaptable and can be individualized—in terms of learning targets, content, methods, and schedules to

meet the developmental needs of individual students, facilitate their self-learning and self-actualization, and optimize their potentials as leaders and citizens (Cheng, 2005, Rauner, 2009, Spottl, 2009).

E. VET Teaching Learning

In the new paradigm, the future world of work is assumed to be in multiple globalizations including learning, cultural, social, economic, political, and technological globalizations. The world of work is moving very fast to become a global village, in which various parts and countries are rapidly networked and globalized through internet and different types of IT, communications, and transportations (Cheng, 2005). According Cheng (2005) in the new paradigm, the human nature in a complicated context is assumed to be multiple, as a technological person, economic person, social person, political person, cultural person, and learning person in a global village of information, high technology, and multi-cultures. Both individuals and the society need multiple developments in the technological, economic, social, political, cultural, and learning aspects. Lifelong learning and a knowledge-based society are necessary to sustain the continuous multiple developments of individuals and the society in a fast changing era (Cheng, 2005).

Teaching is considered a process to initiate, facilitate, and sustain students' self learning, self-exploration and self-actualization. Therefore, teachers should play a role as facilitators or mentors who support students' learning. The focus of teaching is to arouse students' curiosity and motivation to think, act, learn to listen, learn to read, learn to write, learn to speak, learn how to learn, solve problem, how to use resources, process information, interacting in socially heterogeneous groups, acting autonomously, and using tools interactively. Also, teaching is to share with students the joy of the learning process and outcomes. To teachers themselves, teaching is also a lifelong learning process involving continuous discovery, experimenting, self-actualization, reflection, and professional development.

Student is the centre of education. Students' learning should be facilitated to meet their needs and personal characteristics, and develop their potentials in an optimal way. Students can be self-motivated and self-learning with appropriate guidance and

facilitation, and learning is a self-actualizing, discovering, experiencing, and reflecting process. The focus of learning is on learning how to learn, research, think, and create. Students' learning should be facilitated in a way such that local and global resources, support, and networks can be brought in to maximize the opportunities for their developments during learning process.

Through localization and globalization, there are multiple sources of learning. Students can learn from multiple sources inside and outside their education institutions, locally and globally, not limited to a small number of teachers in the institutions. Participation in local and international learning programs can help them achieve the related community and global outlook and experiences beyond education institutions. They will be grouped and networked locally and internationally. Learning groups and networks will become a major driving force to sustain the learning climate and multiply the learning effects through mutual sharing and inspiring. We can expect that each student can have a group of lifelong partner students in different corners of the world to share their learning experiences. It is expected that learning happens everywhere and is lifelong.

Education is just the preparation for a high level lifelong learning and discovery (Cheng, 2005). Learning opportunities are unlimited. Students can maximize the opportunities for their learning from local and global exposures through Internet, web-based learning, video-conferencing, cross-cultural sharing, and different types of interactive and multi-media materials (Ryan, Scott, Freeman, & Patel, 2000; Education and Manpower Bureau, 1998). Students can learn from world-class teachers, experts, peers, and learning materials from different parts of the world. In other words, their learning can be a world-class learning.

The new paradigm emphasizes that teaching should be facilitated in such a way that local and global resources, supports and networks can be brought in to maximize the opportunities for teachers' developments in teaching and for their contribution to students' learning. Students' learning should be facilitated in a way such that local and global resources, support, and networks can be brought in to maximize the opportunities for their developments during learning process. Through localization and globalization, there are multiple sources of learning. Students can learn from multiple sources inside

and outside their education institutions, locally and globally, not limited to a small number of teachers in the institutions. Table 1 show a new paradigm of teaching and learning in future world of work.

Table 1: New Paradigm of Teaching and Learning in Future World of Work

New Paradigm of Teaching	New Paradigm of Learning
<ul style="list-style-type: none"> ✓ Teacher is the Facilitator or Mentor to support Students' Learning ✓ Individualized Teaching Style ✓ Arousing Curiosity ✓ Facilitating Process ✓ Sharing Joy ✓ As Lifelong Learning ✓ Multiple Sources of Teaching ✓ Networked Teaching ✓ World-Class Teaching ✓ Unlimited Opportunities ✓ Local and International Outlook ✓ As World-Class and Networked Teacher 	<ul style="list-style-type: none"> • Student is the Centre of Education • Individualized Programs • Self-Learning • Self-Actualizing Process • Focus on How to Learn • Self Rewarding • Multiple Sources of Learning • Networked Learning • Lifelong and Everywhere • Unlimited Opportunities • World-Class Learning • Local and International Outlook

Source: Cheng, 2005

Different roles teachers play in the teaching process may shape the roles and qualities of students in the learning process that can vary from the very passive way to the active self-learning and self-actualization mode along a spectrum as shown in Table 2 and Figure 1 (Weaver, 1970; Cheng, 2001, Cheng 2005). According to this spectrum, to what role a teacher should change in the new paradigm of education? As shown in Figure 1, there is an ecological relationship between roles of teachers and students. If teachers tend to use more teacher-direct-instruction or be more teacher-centred in teaching (towards roles 8, 9, and 10 as in Table 2), students become more passive in their learning and the qualities they achieve tend to be Habits, Possession of Information and Skills. If teachers tend to use student centred approaches and play roles 1, 2, 3, 4, 5 and 6 in the teaching process, students have more opportunities to be active in self-learning and achieve higher qualities of learning outcomes such as Self-Determination, Responsibility, Creativeness, Adventurousness, Investigation Skill, and Understanding that are important in the new paradigm of education and also crucial to the future of students in the new century.

Table 2: Teachers' Roles and Corresponding Students' Roles and Outcomes

Teacher's Roles	Teaching/ Learning Process	Student's Roles	Likely Student Quality as Outcomes
<ol style="list-style-type: none"> 1. Appreciator 2. Partner 3. Patron 4. Guide 5. Questioner 6. Tutor 7. Counsellor 8. Moulder 9. Instructor 10. Exemplar 	<p>As determined by students</p> <p>Participation</p> <p>Making</p> <p>Searching</p> <p>Experimentation</p> <p>Reflection</p> <p>Expression of feeling</p> <p>Conditioning</p> <p>Transfer of information</p> <p>Imitation</p>	<ol style="list-style-type: none"> 1. Searcher 2. Partner 3. Designer 4. Explorer 5. Searcher 6. Thinker 7. Client 8. Subject 9. Memorizer 10. Trainee 	<p>Self-Determination</p> <p>Responsibility</p> <p>Creativeness</p> <p>Adventurousness</p> <p>Investigation Skill</p> <p>Understanding</p> <p>Insight</p> <p>Habits</p> <p>Possession of information</p> <p>Skills</p>

Source: Cheng, 2005

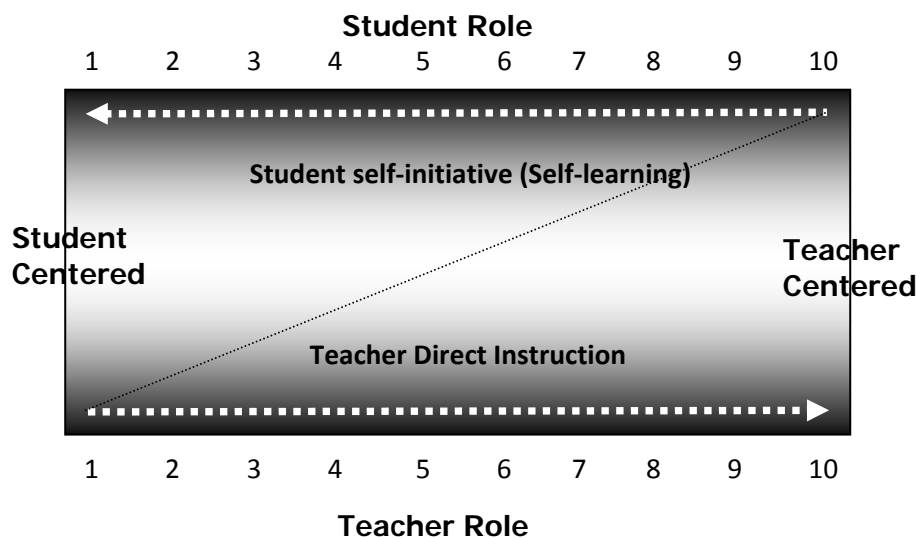


Figure 1: The Ecological Relationship between Roles of Teachers and Students

F. Conclusion

VET is educating the whole person, not just as worker. VET must permit a concentration not only on poverty alleviation but also on (self-)employment. The aim of new curriculum should be develop students with multiple development in technological, economic, social, political, cultural, and learning aspect (Cheng, 2005). The design VET curriculum is based on characteristics of technological, economic, social, political, cultural, and learning aspect and maximizing development oportunities for student' individualized, localized, and globalized learning. The curriculum content is relevan to the globalization of technology, economy, social development, political development, culture, and learning.

The focus of teaching is to arouse students' curiosity and motivation to think, act, learn to listen, learn to read, learn to write, learn to speak, learn how to learn, solve problem, how to use resources, process information, interacting in socially heterogeneous groups, acting autonomously, and using tools interactively. Students' learning should be facilitated to meet their needs and personal characteristics, and develop their potentials in an optimal way. Students can be self-motivated and self-learning with appropriate guidance and facilitation, and learning is a self-actualizing, discovering, experiencing, and reflecting process. The new paradigm emphasizes that teaching should be facilitated in such a way that local and global resources, supports and networks can be brought in to maximize the opportunities for teachers' developments in teaching and for their contribution to students' learning. Students' learning should be facilitated in a way such that local and global resources, support, and networks can be brought in to maximize the opportunities for their developments during learning process.

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