

The Development of a New Skills Standard to Produce K-Workers in Malaysia

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ABSTRACT

The Malaysian Skills Qualification Framework (MSQF) was formulated to classify skilled qualification that indicates the level of capabilities on competency descriptors. MSQF currently enforces competence-based training approach in skills training which is in line with the National Occupational Skills Standard (NOSS). With the advent of National Dual Training System (NDTS), the existing MSQF may need to be revamped due to new requirements resulting from new orientation toward work process. Thus, the purpose of the study was to analyze the effectiveness of the existing MSQF for MSC shop-floor automotive technicians at level 3 to qualify as knowledge workers (K-workers). The study adopted the interpretive qualitative research design which was premised on the phenomenological method by using interview and observation. For the purpose of data collection, participants selected for this study were those who have more than five years of experience in automotive industry and understand NOSS-based training and NDTS. The data analysis forms the themes and the categories that are useful to develop a new framework to show the relationships that exist among the categories under study. This study found that NOSS standards qualify students with specialized skills which restrict them in carrying out other duties. The work processes are facing challenges especially in fulfilling the industry needs due to technological and work organization changes. Secondly, NDTS based on the work process concept builds upon the business process orientation of new industry and supported by the whole work processes rather than specific or functional units only. Thirdly, based on the research data, the new MSQF for MSC shop-floor automotive technicians at level 3 needs to be characterized in line with the two descriptors that are professional competence (knowledge and skills) and personal competence (social skills and autonomy). It is recommended that the new MSQF should be put in place in order to produce quality K-workers for the automotive industry in Malaysia.

Keywords: Malaysian Skills Qualification Framework, National Occupational Skills Standard, National Dual Training System, shop-floor automotive technicians, Malaysia

INTRODUCTION

Malaysia's competitiveness depends on the quality of its workforce in the advent of K-economy and globalization (Ramlee, 2013). Malaysia still grapples with the task of building its economy to achieve a sustainable development to improve the quality of life of its people (Ramlee *et al.*, 2008). Vision 2020 for Malaysia clearly states that education and training are to be geared toward creating human resources and K-workers for industries that can compete in global market (Malaysia, 2006). The government policies to develop K-workers such as: (1) the Ninth Malaysia Plan (2006-2010) was launched to intensify the development of K-workers who are competitive, flexible, dynamic and performance-oriented (Malaysia, 2006) and (2) Third Outline Perspective Plan (OPP3: 2001-2010) was created to develop a dynamic labor force that is capable of meeting the challenges of a knowledge economy in order to enhance Malaysia's productivity and competitiveness (Malaysia, 2006).

Malaysia aspires to become an industrialized and knowledge-based economy where most basic jobs of semi-skilled workers are to be replaced by automation. Thus, knowledge economy requires a high number of K-workers to manage the advance work processes (Zanifa, 2007). The knowledge-based economy is considered as a major strategic move to increase the value-added of the economic sectors. Increasing the breadth of training opportunities are other ways in which companies (global) are creating more knowledge workers (Blanchard & Thacker, 2007). According to Drucker (1999), a knowledge economy requires people with diversified talent. Harbison (1973) emphasized the importance of human capital development in which the workers' knowledge and skills are applied to the production of goods and rendering of services. New kind of vocational programs are needed to prepare for highly skilled workers with flexibility, marketability and innovativeness.

The economic challenge of the post-capitalist society would therefore be the productivity of new knowledge and the knowledge workers (Drucker, 1993). Hence, the K-workers can be described as individuals who are highly skilled, intelligent, motivated, innovative, and thinks like entrepreneurs. His/her knowledge and skills enabled him/her to direct his/her involvement in rapidly changing and increasingly complex work process that produces high quality work. In order to assist organizations to improve their knowledge productivity, Drucker (1999) prescribes six major features: task, autonomy, continuing innovation, continuous training, quality, and worker asset. Harrison and Kessels (2004) proposed that K-workers productivity relates to the way in which individuals, teams and units across an organization work together to generate knowledge-based improvements and innovations. Stam (2007) argued that knowledge productivity refers to the process of transforming knowledge into value. Thus, K-workers are those individuals who embrace life-long training, be able to work in a team and always anticipating the future needs of the workplace (Hoepfner & Koch, 2005). Drucker (1959) describes K-workers as those who work primarily with information or one who develops and uses knowledge in the workplace. Malaysia is currently lacking the critical elements to support development of K-workers. The current workforce does not possess adequate knowledge and skills to qualify the K-worker status (Ramlee & Abu, 2004). According to Allais (2010), it was seen as a problem that technical vocational education and training (TVET), workplace-based or skills qualifications tend to have a lower status than school and university qualifications. However, Technical Education and Vocational Training (TEVT) system has an important role in developing K-workers to satisfy the needs of industry.

Ramlee *et al.* (2008) highlighted the critical skills that include generic and transferable skills such as interpersonal, communication, thinking, problem-solving, and research skills should be incorporated in technical curriculum. According to Mohd Yusop *et al.* (2009), who studied the K-workers' potentials among students in engineering education institutions in Malaysia, stated that cooperation is needed among skills training institutions and industry in an effort to determine the skills and knowledge for K-workers in order to fulfill industry needs. Wan Najib *et al.* (2007) state that the expectation and trust from investors are influenced by the capacity and capability of the country to produce K-workers that can satisfy industry needs.

In 2005, Malaysian Government decided to implement National Dual Training System (NDTS) to qualify K-workers under the comprehensive and latest training system, to meet the industries prevailing requirements (DSD, 2009). NDTS is Malaysia's new approach in the skills training and development to produce K-workers. The NDTS in Malaysia was designed in the context

of work processes based on occupational competencies that are closely interlinked with actual work environment. The need for K-workers is critical in order to cop with the rapid technological changes as well as more complex work process in the future. The concept of work process has been characterized as a holistic knowledge encompassing all dimensions of work-related know-how and experiences (Hoepfner & Koch, 2004; Spottl, 2004). The new skills standard is needed to map the new knowledge, skills, innovativeness and the soft skills needed for the development of K-workers. The standard is also needed to bridge the gap between training system for the workforce and the industrial requirements. Thus, the purpose of this research was to develop a new skills standard to prepare skill workers to become K-workers.

METHODOLOGY AND RESULTS OF THE STUDY

The purpose of this study was to determine the appropriate standard for developing of K-workers. It was designed to determine skills standard and the determinants that can potentially influence in reducing the current mismatch between supply and demand of K-workers. The main aim of this study was to explore the development of new skills standard to produce K-workers. A systematic research was needed to enable the researcher to capture the perspective of automotive industry with regard to its skilled workers' professional competency and qualification. In addition, the study took into account other factors such as rapid technological and work organization changes, and customers' requirements.

This research was conducted using phenomenology method since the researchers needs to understand the phenomenon in a greater depth. Qualitative research is well suited for the purposes of description, interpretation, and explanation (Lee, et. al, 1999). The reason for choosing this methodology is due to the types of question or problem this study needs to explore. Phenomenology simply seeks to discover and understand a phenomenon, a process, or the perspectives and worldviews of the people involved (Merriam 1998). According to Merriam (2001; 2002), phenomenology have a potential in giving a true description from individual experience on certain situations.

The research design was selected because the researchers believed that the study was focused on discovery, insight and understanding from the workers' perspective. An appropriate standard to develop to qualify K-workers would offer greater potential for a significant contribution to the knowledge base of the area investigated (Merriam, 1988). Table 1 shows the case and the focus of this study.

Table 1: Case and Research Focus

Case	Focus
Investigation of company work processes, company's organization, human resources development, need for qualification, and skills training issues.	Interview, observation and documents analysis of the situation of skilled workers, improvements, changes and problems, need for qualification
Key: Socio-economic structures, change of work and tasks, work processes and issues in training.	Key: Dimensions of qualification for technicians
Field of investigation: Automotive industry in repair and maintenance sector	Field of investigation: Companies, human resources development, work processes for technicians

According to Spottl (2000), in-depth information is needed, such as pertaining to competencies, as well as qualification and training issues. In this study, the researchers have taken four different companies in automotive industry in repair and maintenance sector for data collection. The researchers had visited the companies, interviewed main persons, analyzed documents and made

work observations for triangulation purpose. Through observation and field notes, researchers can determine the main factors based on the empirical data. The advantage of interview is that the participants provided in-depth description. The researchers also have conducted document review such as working papers, cabinet paper, plans, reports, workshop paper, and historical documents on the development of existing skills standard in Malaysia.

The participants selected have worked as supervisors or executives in the training department of the companies. The study used three selection criteria for the participants: (1) knowledgeable in skills standard, (2) possess more than five years working experience in the field, and (3) involved in skills training course at their company. The study also identified the actual demand at the workplace for skills standard to produce K-workers.

The study found that workers need to build up their competency which helps them to carry out their job well. Participant D noted that:

“We need technicians who have skills to do their jobs because they must solve the customer’s problem; especially for a new car. They need to tackle the customer’s car problem as soon as possible. For example, he can explain to the customer, why the car brake is not functioning properly...He must able to carry out his work with respect and responsibility”.

In the development of skilled workers, other than technical know-how and know-what, they need to have the knowledge of know-why. Participant B believes that:

“Apprentices can explain why machine and technology were integrated in theory. Today, customers want to know everything. Customers want more information and explanation, if we can explain before the customer asks; that is good”.

This study also shows that workers in a company are assessed not only from technical aspect, but also their soft skills in order to obtain better promotion. Participant A noted that:

“We had organized many soft skills programs such as team building. In reality, it is time for apprentice to promote themselves and show their talent. At this stage, for any apprentice who can show their talent and attract people will be first to be offered a job... soft skills includes “value added” such as good communication, working under stress, full commitment and good attitudes”.

In addition, apprentices need to have high self-resilience and can carry out duties when facing problem or criticism. Participant C asserted that:

“NDTS apprentices have a high confidence facing any situation; their confidence level is high... a new car come with latest technology, they know how to solve the problem because they learn to absorb new information through their own effort... NDTS approach also develops the workers self-resilience and self-discipline. The company needs their new workers to be more innovative and creative in solving problem, and not to simply follow their seniors based on what they did”.

FINDINGS AND DISCUSSION

Skills standard has to be set up based on industry needs and it has to reflect a wider scope and competitiveness due to work structure changes. Workers demanded by industry are highly skilled and are able to solve problems independently at their workplace. The results of this study also show that industry needs workers who are significantly committed and have the ability to carry out high quality services. Workers who possess high-end skills and very competitive are known as K-workers. They are in great demand. According to Gilgeous and Parveen (2001), skills standards should lay out the employee’s competency requirements based on the current needs of the industry. According to Garavan et. al, (2001), with competent workers, the company is poised to deal with flexible business

needs. In the era of the K-economy, industrial sector faces significant challenges in acquiring competent workers.

These findings also suggest that skills standard must emphasize what an apprentice must know and do relating to technical, personal and basic skills to qualify to become K-workers. Occupational qualification must be based on the abilities, skills, knowledge, attitudes that ultimately the apprentice has to possess (Spady, 1994; Komo, 2000; Maehler, 2005; Winterton *et al.*, 2005). Thus, the new skill standard should reflect the dynamics and flexibility of an apprentice in doing different jobs that fulfil the needs of the workplace. The standard also needs to specify definitive competency regarding the jobs that must be carried out to ensure quality workmanship. The K-workers must have the following four elements: (1) skills, (2) knowledge, (3) social skills, and (4) autonomy (as a shown in Figure 1).

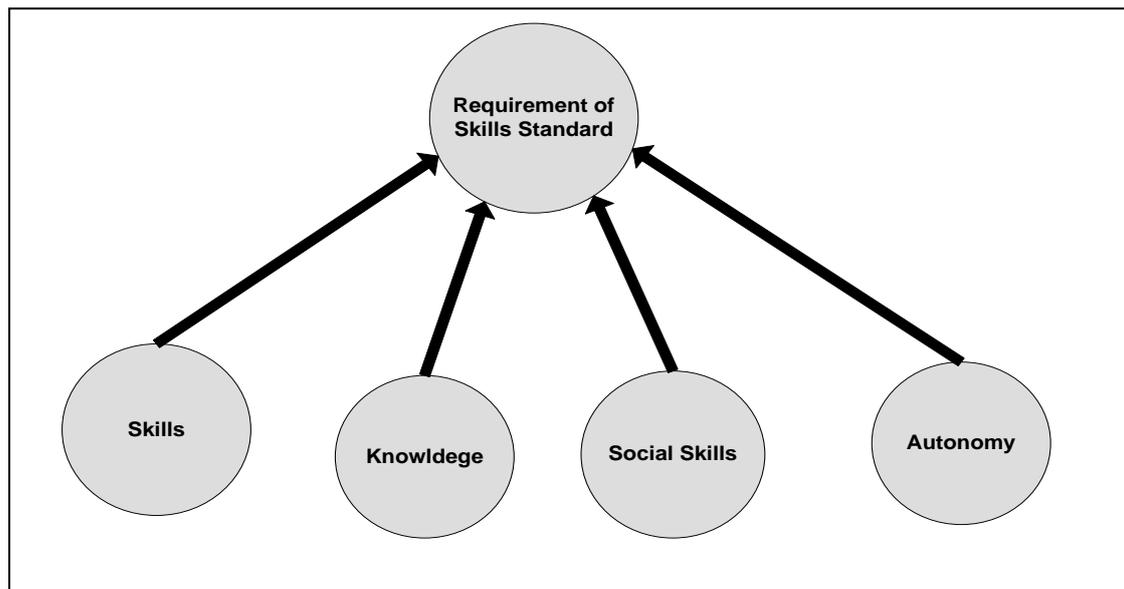


Figure 1: Main elements of skills standard

Skills

Skills enable workers to build up their competency which helps them to carry out a job well. A person's know-how and know-what are the bases of competency. Skills are a combination of mental and physical abilities that require training. Skill is measured according to level of competence to ensure a worker can carry out his/her duty with accuracy and speed, and this is known as skill performance. Skills performance is a measure of competency of an individual in carrying out his/her duties which give satisfaction to customers with regards to products and services offered. According to Spottl and Becker (2004), the application of work process model is important especially in highly technical industry like the automotive because the skilled workers need to be trained on know-what and know-how.

Skills and competence place new demand on know-how rather know-why. Skilled workers are expected to be able to carry out tasks based on requirements of an occupational area. Skilled workers should also have the ability to use their technological and social know-how to complete their job tasks and solve clients' problems successfully and satisfactorily.

Knowledge

In the 21st century, knowledge and technology are the two key factors that can change work structure in an organization. K-worker is a competent individual think innovatively and creatively using modern technology. We are living in the era of K-economy, so K-worker could provide a competitive edge for any company. According to Drucker (1999), lacking of knowledge workers is the biggest challenge of the 21st century.

In the development of K-workers, other than technical know-what and know-how, they need to have the knowledge of know-why. An organization needs to understand that knowledge is an asset in the company, i.e. how to gain from it, way to maximize profit, and way to transfer knowledge especially tacit knowledge for workers that will carry out their duties and be responsible in their job. According to Winterton *et al.* (2005), holistic knowledge of processes and contexts; knowledge know-that underpinned the know-why, is critical for competitive companies. Knowledge is the link between information and experience that needs to be adopted by business organizations to compete locally and globally. Knowledge can be built up and gathered by individuals through know-why. To reduce the knowledge gap, the company needs to have not only competent skilled workers but be able also to solve problem by using theoretical knowledge.

According to ILO report (1998), workers need cognitive ability and basic skills in all current and future jobs, and lacking these skills will reduce productivity, increase accident rate and serious mistake in output. Workers need to strengthen their cognitive ability and basic skills such as (1) writing, (2) reading, (3) numeracy and science, and (4) computer literacy. Efficiency in cognitive ability has been related to success in job requiring cognitive duties (Sarimah, 2005). Vocational students need technical efficiency as compared with those in academic or professional fields which stress on oral efficiency (*ibid*). Oral ability is the ability to use language like speech fluency, comprehension and public speaking. This ability is measured by usage of words like using suitable words to form sentence and speaking clearly and with confidence.

There is a strong relationship between skilled workers and basic skills. A skilled worker should possess basic knowledge in reading, writing, mathematics, science and ICT to become a K-worker. A modern skilled worker is not only focused on “hands-on” or technical skills, but strong in basic skills to qualify as a K-worker with potential to adapt to technological and work changes.

Social Skills

Social skills reflect the desire and the ability of a worker by his/her attitude, character, personal values, interest and motivation in controlling emotion, and making good interaction with others. A worker with effective social skills is more likely to sell goods and services to the customers. Social skills include the ability to work in a team, open-minded attitude, ability to work under pressure, handle conflict and possess good personal value. Soft skills are reflected in worker’s ability in providing high quality service. According to Paul (2002), right attitude and smart interpersonal skills have become a must for employee in an organization. Workers in a company are assessed not only from their technical expertise, but also their soft skills in order to obtain better promotion.

Competent workers with strong social skills are pertinent to achieve organization’s goals. Workers who possess good social skills often have satisfactory relationship with colleagues and better external relationship with customers and in the long run could contribute to higher job quality and productivity. In addition to face constant change, workers need to be innovative and creative to prepare themselves to face critical challenges. Creative and innovative ideas are essential to improve a process, a product or a service that could increase the productivity of an organization.

This study shows that workers who have critical thinking and problem-solving abilities are better off when they deal with challenging situations. In general, a workers’ job satisfaction may affect the quality of his/her workmanship. This study confirms the importance of social skills in improving relationships with internal and external customers. An organization would succeed if their workers enjoy work in team and have good team spirit. Thus, NDTS has included the element of work enjoyment to raise worker’s pride towards team and organization. Social skills can build up an individual through (1) having harmonious attitude and character and good spiritual values; (2) extending mental ability with continuous education or life-long learning, and (3) having the capacity to make decision which is of quality and impactful. Thus, social skills are important added-values for workers to qualify them as K-workers.

Autonomy

Work culture has changed as the result of the fast changes in technology and work organization. Autonomy refers to one’s thinking independently in an uncertain and complex situations. Apprentices need to have high self-resilience and can carry out duties when facing problem or criticism. Thus, apprentices need to overcome problem when facing changes in work process with self- resilience and

high self-discipline. Today's workers therefore need to be proactive, look for new knowledge, be independent in order to qualify as K-workers.

The new skills standard based on occupational profiles of work skills which follow the work process philosophy that embraces competency development and social attributes namely, knowledge and technological know-how; critical thinking; problem solving; mathematical, multi-skilling; team work; responsibility; autonomy; and continuous learning. In the new production and services scenario, skilled workers are expected to be more flexible, and work across boundaries to improve work quality such as customer complaints, quality service delivery, faster turnaround time, robust marketing, high productivity, etc. In addition, the skills standard should be designed based on competencies.

The new skills standard contains core competencies and work-related activities as shown in Figure 2. At the workplace, apprentices are trained through problem solving which focuses on the work process for improving effectiveness and efficiency under the new circumstances. Training at workplace is critical to achieve competitive skills needed to develop K-workers that are self-directed, multi-skilled, creative, and possess good social skills. The study also found that the new skills standard needs to be characterized in line with the two descriptors that are professional competence (knowledge and skills) and personal competence (social skills and autonomy).

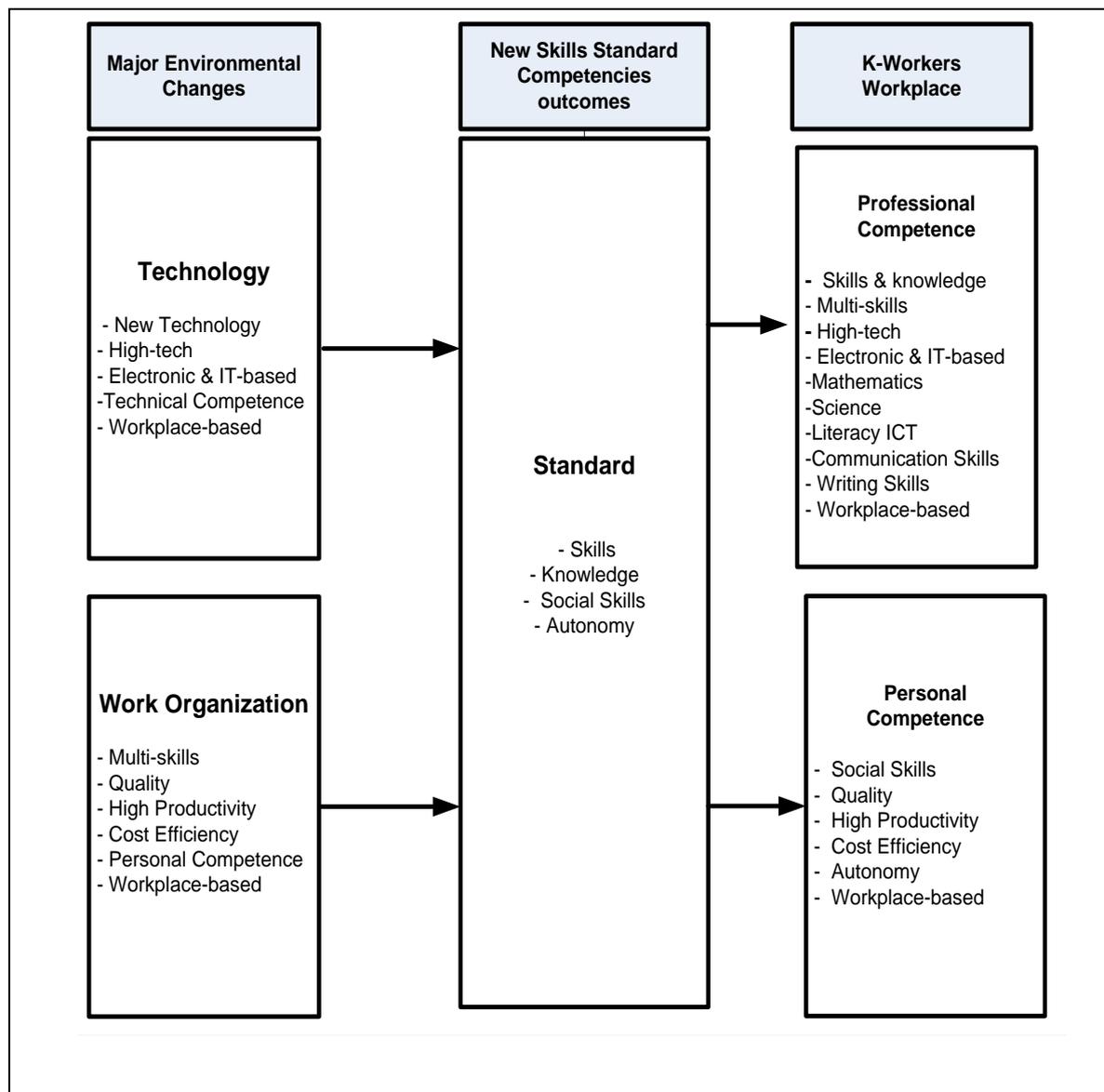


Figure 2: Major environmental changes to development of new skills standard in automotive industry

CONCLUSION

This study found that the occupational competence through work process is important in the entire set up of skills training especially in the automotive sector. Therefore the identification of work tasks for occupational profiles forms the basis for the curriculum or standard conception in skills training. Thus, this study proposes a new skills standard which is based on occupational profile with work process concept consisted of four elements; skills, knowledge, social skills and autonomy. The development of the underpinning basic skills are equally necessary in order to impart soft skills such as the ability to communicate orally, the ability to write, the ability to read texts, and the usage ICT effectively. The new skills standard may serve as a major vehicle for the Malaysian skills training programs in terms of improving apprentices' competencies and providing guidelines for competency development in a multi-dimensional way as well as standardizing certification of competencies in the formal and informal training programs. Thus, the new skills standard could be used to set the qualifications of multi-skilled and K-workers that are versatile, willing to learn continuously, ability to acquire and apply knowledge, and independent.

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