A STUDY OF HUMAN SKILL ACHIEVEMENT IN MALAYSIAN PUBLIC UNIVERSITIES: KNOWLEDGE, SKILL AND ATTITUDE

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Abstract

The principle of sustainable technical skill development is an integrated skill approach in the long terms by the instruments of science, technologies, economics and global considerations. The prospect of full implemented successfully needs a workforce which is equipped with sustainable development with related knowledge, skill and attitude (KSA). This study is related to the human skill achievement referred to the capability of technical staff in public universities. Purposely is to establish the procedures for the management and control of capital equipment. It also is to satisfy the requirements of the federal and state government and good business practices respecting control over the capital equipments. This study will be a significant endeavor for Human Resource Development (HRD) to measure the capability of human factors through KSA. The methodology of this descriptive study by searching the related topic literatures, white papers, technical papers, conference proceedings, and web-pages or even communicate to the personnel in selected public universities in Malaysia. The finding of this study will contribute to develop Overall Equipment Efficiency Model (OEEM) that could be measurable throughout to the technical skill performance among technicians in the engineering lab derived from KSA components. Therefore, human skill developments are the first competence bench marking in the capital equipment management in Malaysian public universities was identified.

Field of Research: *Sustainable Development, Knowledge, Skill and Attitude, Human Skill Achievement, Human Resource Development, Overall Equipment Efficiency Model*

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1.0   Study Outline

This study is related to human skill development. What is human skill? Human skill referred to as human relation skills or interpersonal skills are one's ability to work effectively with others on a person-to-person basis and to build up cooperative group relations to achieve specified objectives (Lemmergaard, J., 2009). Human skills will be reflected in the following actions (Scott, B. 2008);

A. The basic tenets of human skills are that treat everyone in the group as equal, not inferior, to you. This must be reflected by your words as well as body language.

B. Have positive attitudes towards fellow candidates. Your positive attitude will not only be appreciated by other candidates but by evaluators too as people with positive attitudes are appreciated by everyone. Though each of the candidates is your competitor, do not treat them as your competitors but treat them as your colleagues and have respect for them and their views.

C. When you listen to views of anyone, evaluate these empathetically, that is, putting yourself in his position so that you can understand why he has those views. If you look at the views from this perspective, you can appreciate the views in a better way though it is not necessary that you agree with others' views either totally or partially.

D. Show emotional maturity while interacting with others. If someone criticizes yours views, do not take it on personal basis but take it on professional basis and keep yourself cool and do not lose your temper.

E. If someone's view seems to be absurd or irrelevant to the topic, do not let him down by saying such words which are not in accordance to the etiquette of gentlemen.

It is by using method KSA which stands for Knowledge, Skills and Attitude Lemmergaard, J. (2009).

1. Cognitive (knowledge)
   o Verbal Knowledge - factual and declarative knowledge (propositional knowledge) knowledge
   o Knowledge Organization - how information and concepts are mentally arranged
   o Metacognitive Strategies - allocation and regulation of cognitive resources
2. Skill-Based (psychomotor)
   o Compilation - routine development and procedure linkage
   o Automaticity - ability to perform a task without Conscious monitoring and with other tasks
3. Affective (attitudes)
   o Attitude - attitude about learning, self-efficacy, perception about ability to perform, and goal setting
   o Motivation - motivational disposition

2.0   Keywords Definition

2.1   Knowledge

The definition of knowledge can differ depending on the epistemology, the theory of knowledge creation, the reader chooses to follow. Many authors such as F.W. Taylor (1911), P.F. Drucker, (2008) and A. Toffier (1981) choose to equate "knowledge" to "information", and "data" and use the terms interchangeably.   Authors   more   focused   to   the   areas   of   continuous improvement, the principles of kaizen, continuous improvement and modern Japanese management philosophies based on Zen Buddhism, for example, P.M. Senge (2000), B. Levitt and Nonaka and Takeuchi (1995), contend that knowledge has two components - the explicit and the tacit.   The explicit component can be broadly but not exclusively equated to information while the tacit component covers the informal and hard to define skills gained by experience together with the schemata, mental models and beliefs - the factors that enable people to use such information.   In the latter sense, knowledge can appear to verge into the areas of skills and attitudes. Even if this is so, knowledge must remain as more than information.

Vocational education is about the quality (Mika Maliranta 2010), which includes the continuous improvement, of the Australian workforce.   Hence knowledge within the ambit of vocational education must be considered in its broadest sense. It should be considered not only as the required information but also as the capacity to apply it to the immediate work tasks.   The other epistemology of supplying a quantity of information so the learner can develop his/her own schemata etc more closely aligns to academic studies and their application   to   the   work   environment.   By   its   own   volition,   this   latter epistemology leads to a "trial and error" methodology that is very different from the defined principles and objectives of vocational education.

2.2   Skills

According to (Lawler, E.E., Mohrman, A.M., 2003) skills are defined as expertness, practiced ability, facility in doing something, dexterity and tact. Skill encompasses experience and practice, and the gaining of skill leads to unconscious and automatic actions.   Skill is more than just the following of rule based actions. The potential downside of such an attribute is that, in the absence of knowledge and attitudes, such a "skilled" person may have no ability or capacity to react to situations outside the normal condition. Without the knowledge and attitudes contributing to competency, such skills alone can be demonstrated as one of the major causative factors in human error. Put alternatively, skills alone without knowledge and attitudes can be dangerous - knowledge and attitudes must support skills. This is seen as a very important issue in an industry such as fireworks, where the consequences of an error can be very serious.

There are five skill sets that cover the dimensions of competency and these are defined in the Australian vocational training system.

1) Task Skills - the requirement to perform individual tasks to an acceptable level of skill (recall information or terms, application of process.)

2) Task Management Skills - the requirement to manage a number of different tasks within the job. (Priority setting, sequencing of tasks, tips to make job easier.)

3) Contingency Management Skills - the requirement to respond to irregularities and react appropriately when things go wrong. (What do you do if, who to contact, why is it important.)

4) Job/Role Environment Skills - the requirement to deal with the responsibilities and expectations of the work environment, including interacting appropriately with others in the workplace. (Duty of care, obligations, safety requirements.)

5) Ability to Transfer Skills - the requirement to transfer knowledge, skills and attitudes to new situations.

2.3 Attitude

Attitude can be defined as a learned tendency to act in a consistent way to a particular object or situation. Attitudes have affective, cognitive and behavioral intention components (Abderrahman Hassi 2011). A competent person must have the capacity to sense and recognize a situation, the tendency to act in a controlled and predictable manner and an ability to be consistent in acting in a manner relevant to the situation. In relation to safety and health issues, these attributes need to be directly related to the situation and not of a generalist nature.

3.0 Study Framework

Three Pillars to Build For Success:

What makes a person a champion whether he or she is a singer, an artist, a student, a teacher or a businessman or any other professional you think of, some say hard work, talent, give credit to luck and so on. Lots of things to say we can keep on talking on this and never come precisely on what exactly is required.

Whatever, to become a champion only three things, which is knowledge, skills and attitudes. Knowledge plays its role as of foundation (Paul Lyons 2005), basic building block and also supports the other two pillars. Skills help in doing things effactually and play a very visible role in dominating over others and becoming competent like communication and presentation skills help in convincing others and taking the edge. Attitude plays a front line role and is a major driver for converting potential energy

into kinetic energy. If you have K and S but negative A then still a lot remains to be done for achieving success. Attitude is one thing that is very common in its application whatever form of field or application is whether it be sports, job, and teaching. That's why one must have something to do to get the attitude right. That can be sports or religion. Whether one is a student, teacher, sportsman, doctor, engineer, scientist; good thing about attitude is, in every field almost the same sort of attitude (positive) required to achieve success.

As they rightly say "Attitude Drives to Altitude". So if you have been a good sportsman and right now doing a job that will certainly be a strong point for having success in your hands.

Knowledge and skills define the area of expertise, specialization and field in which you are playing. To be the champion in your field, you have to strengthen these pillars also not only by gaining knowledge and mastering skills but also being creative, which will help in exploring new areas, new knowledge. Creativity and innovation has played major contribution in the life of individuals and nations for taking edge. It has proved to be the only short cut available for success.

4.0   Significance of this Study

This study will be a significant endeavor for Human Resource Development (HRD) to develop knowledge, skills and attitudes (KSA) in order to improve performance or personal growth for the purpose of improving the job, the individual, and the organization. Human Resource Development (HRD) in helping employees to develop their personal and organizational skills, knowledge and abilities. Human Resource Development includes such opportunities as employee training, employee career development, performance management and development, coaching, mentoring, succession planning, key employee identification, tuition assistance and organization development (Arif Hassan 2007).

Our organizations and jobs will never be the same. Changes are based on the global economy, on changing technology, on our changing work force, on cultural and demographic changes, and on the changing nature of work itself. The changes are different this time. They are permanent, and will permanently affect the way our work and our lives are structured. We need to learn new skills and develop new abilities, to respond to these changes in our lives, our careers, and our organizations. We can deal with these constructively, using change for our competitive advantage (DeGeus, A. 1997), and as opportunities for personal and organizational growth, or we can be overwhelmed by them.

Everyone will need to acquire and/or increase their skills, knowledge and abilities to perform their jobs. The goal of HRD is to improve the performance of our organizations by maximizing the efficiency and performance of our people. We are going to develop our knowledge and skills, our actions and standards, our motivation, incentives, attitudes and work environment.

According Edgar, F., Geare, A. (2005), the important of this study are to focus of all aspects of Human Resource Development is on developing the most superior

workforce so that the organization and individual employees can accomplish their work goals in service to customers. Development in human resource is an important to measure the level of advancement as well as to ensure that our services competencies are able to grow continuously. Thus, human resource and development skills are important to the long-term success of any organizational development process essentially in Malaysian public universities.

5.0   Preview of this Study

Previously, Human Resources Development Canada (HRDC) contracted the National Centre for Workforce Development to conduct a study designed to identify the broadly transferable sustainable development-related knowledge, skills and attitudes required by the workforce. This study fits under the HRDC Sustainable Development Strategy Programs (SDSP) which calls for an assessment of the overall Sustainable Development related to the knowledge/skill needs in the economy over the medium term and how these might be better assessment on human resources capabilities and strategies.

This study was conducted in two phases. In Phase I, we conducted an extensive review of literature and research to identify knowledge, skills and attitudes (KSAs) related to the three elements encapsulated in sustainable development, namely: Environment, Society and Economy (Lawler, E.E., Mohrman, A.M., 2003). In Phase II, we validated these KSAs using a focus group of individuals representing Canadian diversity and with expertise in environment, sustainable development and workforce development. The experts confirmed that the great majority of the KSAs were relevant to the goals of sustainable development. They provided some concrete suggestions for consolidating the KSAs and for collapsing the KSAs under unifying themes in order to capture their interconnectedness and interdependencies. The experts also recommended the use of action focused statements in the formulation of KSA statements. Six major themes emerged forms the analysis of the KSAs. These are:

- Ethics and Values
- Integrated Decision-Making
- Responsible Use of Resources
- Valuing Diversity
- Safety and Well-being
- Continual Improvement

The experts who participated in the focus group were invited to comment on these categories by e-mail. All those who responded supported the use of these skill clusters for organizing the KSAs. The core KSAs from the environment, society and economic categories were analyzed and classified under these five unifying clusters. The Sustainable Development Skills Profile (SDSP) was generated as a result of this analysis process.

This SDSP consists of a set of broadly transferable skills for the Canadian workforce,

regardless of job function, sector and level of education and training. It is also broadly applicable to general education, adult education and the technical and vocational education and training.

6.0   Implementation Review of this Study

The field of human resource development (HRD) has slowly shifted its focus from the individual to a greater consideration of multiple levels: individual, group, work process, and organization (Swanson & Holton, 2009). Whether dealing with an individual, group or the organization as a whole, an HRD practitioner's aim is to work toward increasing organizational effectiveness through the use of learning and performance improvement methods. HRD can be applied in production, management, marketing, sales, research and development as it needs to manage and operate our organizations.

Individual behavior is a reflection of the environment and specific behavioral responses cannot accurately be predicted without knowledge of the context in which the individual or group functions. It is therefore important to understand the interpersonal relationships that occur in an organization and the impact contextual factors have on the individual's response to the work environment. Creating a balance between interpersonal dynamics and the working environment is critical to organizational effectiveness (Cohen, 1990; Yamnil & McLean, 2001). However, HRD methods in which practitioners can analyze the interaction between individuals and their environment have not been readily available.

For Human Resource Development (HRD), we can see that there are many applications that had been applied in our real world. The examples are in the semiconductor industry, Silterra Malaysia Sdn Bhd. In a workplace where employees are constantly impacted by the environment of change, corporate leaders are faced with critical decisions among myriad choices about how to plan for and affect the evolving lifelong learning needs of their organizations. The challenge for Silterra Malaysia Sdn Bhd (Silterra) and it employees is to identify those needs, implement and execute them. As one of the pioneers in semiconductor fabrication industry in Malaysia, it is the intent of Silterra to create a legacy in the area of training and development. It is the goal of the company to become a learning organization. Continuous learning is a key success of a learning organization. To sustain as a learning organization, the HRD programs are used to develop competency sets for Silterra employees. The evaluation system developed by Donald Kirkpatrick (1979) has been used to measure the effectiveness of HRD programs. However, there is an on-going debate in the field of evaluation about which is the best approach to facilitate the processes involved.

Training and development are another approaches for a successful Human Resources Development program prepares the individual to undertake a higher level of work, "organized learning over a given period of time, to provide the possibility of performance change" (Nadler, 1984). In these settings, Human Resources Development is the framework that focuses on the organization's competencies at the first stage, training, and then developing the employee, through education, to satisfy the organization's long-term needs and the individual's career goals and

employee value to their present and future employers. The broader concept of national and more strategic attention to the development of human resources is beginning to emerge as newly independent countries face strong competition for their skilled professionals and the accompanying brain-drain they experience.

Applicant recruitment and employee selection form a major part of an organization's overall resourcing strategies, which identify and secure people needed for the organization to survive and succeed in the short- to medium-term. Recruitment activities need to be responsive to the increasingly competitive market to secure suitably qualified and capable recruits at all levels. To be effective, these initiatives need to include how and when to source the best recruits, internally or externally. Common to the success of either are: well-defined organizational structures with sound job design, robust task and person specification and versatile selection processes, reward, employment relations and human resource policies.

Human Resource Development Organzation

7.0   Process of this Study

7.1   Human Resource Development

The human resource development can be stated as follows:

Human Resource Development (HRD) is the framework for helping employees develops their personal and organizational skills, knowledge and abilities. Human Resource Development includes such opportunities as employee training, employee career development, performance management and development, coaching, mentoring, succession planning, key employee identification, tuition assistance and organization development (Daniel M. Cable, 2001).

The focus of all aspects of Human Resource Development is on developing the most superior workforce so that the organization and individual employees can accomplish their work goals in service to customers. Organizations have many opportunities for human resources or employee development, both within and outside of the workplace.

Human Resource Development can be formal such as in classroom training, a college course, or an organizational planned change effort. Or, Human Resource Development can be informal as in employee coaching by a manager. Healthy

organizations believe in Human Resource Development and cover all of these bases (Worrall, L., Cooper, C. 2001).

7.2   What is Knowledge?

Knowledge is a very important item or material that can be seen or touch when the person is willing to search the knowledge itself. The knowledge as be define by the Dictionary .com, it can be stated in few ways such as:
- Acquaintance with facts, truths or principles as from study or investigation; general erudition; knowledge of many things
- Familiarity or conversance, as with a particular subject or branch of learning: A knowledge of accounting was necessary for the job.
- Acquaintance or familiarity gained by sight, experience   or   report   of human nature.
- The fact or state of knowing; the perception of fact or truth: clear and certain mental apprehension.
- Awareness as of a fact or circumstance: He had knowledge of her good fortune.
- Something that is or may be known: information the body of truths or facts accumulated in the course of time.
- The sum of what is known: Knowledge of the true situation is limited.

The knowledge is actually very essential to all the human beings (Lawrie, G. 2002). They need to learn how to make things and be creative and in order to do so; the human needs a requirement which is the knowledge. For an example, a human wants to build a machine to do something for him; therefore, he needs to have the knowledge to create a machine and how to operate it.

7.2 What is Skills?

Skill from general perspective is the knowledge that they had and practices in their daily life (Rebecca Mitchell, David Meacheam 2011). Other than that, from the BusinessDictionary.com, skills can be defined as an ability ad capacity acquired through deliberate, systematic and sustained effort to smoothly and adaptively carryout the complex activities or job functions involving ideas which can be seen as cognitive skills. Furthermore, the things can also be seen as the technical skills and or people which are the interpersonal skills.

On the other hand, skills can be seen as expertness, practiced ability, facility in doing something, dexterity and tact. Skill encompasses experience and practice, and the gaining of skill leads to unconscious and automatic actions. Skill is more than just the following of rule based actions (Lawler, E.E., Mohrman, A.M., 2003).   The potential downside of such an attribute is that, in the absence of knowledge and attitudes, such a "skilled" person may have no ability or capacity to react to situations outside the normal condition.

There are five skills that can be seen as advantages to the individual while giving the opportunities to them to become expert in the areas that they can go through (Lawler, E.E., Mohrman, A.M., 2003). The five skills are:

o **Task Skills** - the requirement to perform individual tasks to an acceptable level of skill (recall information or terms, application of process.)

o **Task Management Skills** - the requirement to manage a number of different tasks within the job. (Priority setting, sequencing of tasks, tips to make job easier.)

o **Contingency Management Skills** - the requirement to respond to irregularities and react appropriately when things go wrong. (what do you do if, who to contact, why is it important.)

o **Job/Role Environment Skills** - the requirement to deal with the responsibilities and expectations of the work environment, including interacting appropriately with others in the workplace (duty of care, obligations, safety requirements.)

o **Ability to Transfer Skills** - the requirement to transfer knowledge, skills and attitudes to new situations

For this report, the skills that we can discuss briefly are the job or role environment skills and task skills. The task skill as mentioned above is where the individual require managing the number of the task in the job given. As for an example, the engineer needs to do number of task in completing the machine that he wanted to do. The engineer needs to have the task skill in order to complete the machine (Worrall, L., Cooper, C. 1997).

The job or role environment skills is where the individual needs the requirement to deal with the responsibilities of the work environment as for example the engineer will need to obey the safety and regulations that already provided in the manual of the construction of the machine as well as the ethics in the workplace.

7.4   What is Attitudes?

The definition of the attitudes is where the manner, disposition, feeling, position with regard to a person or thing (Abderrahman Hassi 2011). In addition, it is the tendency or orientation which especially of the mind. Other than that, it can be seen as follows:
- Position or posture of the body appropriate to or expressiveof an action, emoti on, etc.: a threatening attitude; a relaxed attitude.
- Aeronautics. The inclination of the three principal axes of an aircraft relative to the wind, to the ground.

The attitude is actually essential in workplace because it shows the true colours of the workers regarding on the tasks given to them. This perspective is needed to obtain a good result in order to create an outgoing and achievement of the goals of the tasks given.

8.0   Benefits

The benefits that could the manager or the employees get in this KSA of human skill developments are first the competence in the organizations allows managers to interconnected different types of information with the aim to formulate ideas, conclusions and concepts as well as prediction of events, identify potential strategies, method, improvements and changes (Lawrie, G. 2002). Besides that the other benefit is the organization could integrate old and new knowledge for the identification of what the team does well and what should be changed. Next is to able to choose from the quantity of information that is relevant for the strategic objectives of the projects that organization done. The other benefit is to verify the "bearing capacity" of ideas on the manager himself and on team members, with the aim of motivate critical thinking before making a decision. The sixth benefit is to delegate the creation of ideas to the team members so that they could contribute significantly to the discussion. Last but not least is to stimulate the establishment of informal contacts among the team members with the aim of systematically develop ideas for potential changes (Worrall, L., Cooper, C. 1997). Therefore, the finding of this study could be able to contribute on the process of developing model for measuring the utilization of overall engineering laboratory equipments in Malaysian public universities.

9.   Conclusion

The principle of sustainable developments calls for an integrated approach to environmental, social, economic and global consideration (Hens Runhaar 2006). The prospect of full integration cannot be guaranteed in the longer terms by the instruments of science, technologies, economics and law alone. If the principle of sustainable development is to be implemented successfully, there is also a need for a workforce, which is equipped with sustainable development-related knowledge, skills and attitudes. These KSA skills must be woven into workforce development so that the workers can become more reflective practitioners who can be effectively and efficiently contribute to the goal of sustainable development. The KSA also had provided the underlying foundation to support reflective practice in the workplace and in personal life as well. Besides that, the successful application of project management on building organization, for instance, is perceived mostly from the viewpoint of financial resources, time, products used of computers technologies and many more (Worrall, L., Cooper, C. 2001). The low experiences project managers does not allow for the full development if importance aspects of successful project management such as the selection and preparation of team members, the development of cooperative, communication scheme, which means the decision making, acceptance of personal differences and prevention as well as the settlement of conflicts, handling of object and etc.

10.   Suggestion

The recommendation of this KSA are first is start from small if knowledge or skill development is new for the group. Second is get advice from others and learn from the successes and failures. The other suggestion is make sure you have the knowledge and skills needed to manage the capacity building process. Fourth is making sure you have the right people doing the right jobs. Match people's values, interest and skills to the tasks that need going. Next is learning and capacity development does not work as an isolated event, but it has t be connected to whatever comes next (Worrall, L., Cooper, C. 2001). The sixth recommendation is some people find learning easy and fun but not others. Maybe the other people are afraid of it and will need encouragement and support. Last but not least is all members have skill and valuable experience that can be applied to the community development process (Lawrie, G. 2002). The challenge is to identify ways to tap into and develop the skill. It also can only be met if you have the ability to match the skills needed for a successful community development effort to the skill and in-going learning of community members.

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