

Engineering Trainee Characteristic: How Does This Affect Modern Apprenticeship Training In Malaysia?

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Abstract

Modern apprenticeship training systems require trainees to have the capability to become highly skilled workers. However, most studies only deal with high-skill and knowledgeable terms without deliberating in depth what skills are required in the high-skilled intentions. Thus, this study is conducted to examine the characteristics of the trainers to form the model of modern apprenticeship trainer characteristics to develop highly skilled workers. Modern apprenticeship system should combines elements of mixed trainee ability. Previous study showed that most trainees enter public training institutions due to poor academic results. This creates the view of public vocational training institutions as second-class education. Study using grounded theory method was to identify the factors behinds successful trainees and how they manage their learning process. A total of 32 respondents were interviewed comprising trainees, industry supervisors, and employers. The results showed that there are eight factors that contribute to the success of the trainees in training institutions and also through industrial training before being appointed as an employee. This clearly shows that the success of the apprenticeship training system not only depends on the training system itself but also on the trainees' characteristics model that are natural or formed by the working environment.

Keywords : Modern Apprenticeship, Vocational Education, Grounded Theory, Skills Acquisition, Engineering Trainee

I. Introduction

Many studies have shown that personality traits play an important role in trainees in the training institutions or in the workplace. These trainee personality features contribute towards the success of the training system formed in accordance with the country's development needs. In Malaysia, under the 10th Malaysia Plan, the government intends to mainstream technical and vocational training system in line with the mainstream academic system (Government of Malaysia, 2010). Statistics of developed countries such as Singapore, Germany and Australia showed that more than 50 percent of their workforce comprised of skilled labor (Ministry of Human Resources, 2011; Government of Malaysia, 2009). Therefore, the government intends

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to increase the enrollment of trainees to vocational training and apprenticeship system from 65,000 people to 130,000 by 2015. Through increased enrollment in vocational training system, it can directly increase the number of skilled and semi-skilled workers in Malaysia. However, what are the characteristics of trainees that needs to be select and how the highly skilled trainers should develop?

Engineering Trainee Characteristic

Trainees and instructors are two essential elements in the modern apprenticeship system. Readiness of trainees to receive learning will guarantee the success of the training. Nor Hayati (2005) studied the development of a well-balanced national science education. She stated that Islam as a basis for science education curriculum planning and design; science educators' balanced presence; the presence of students who are willing to be educated; the availability of science education that fosters a culture of science; and the nature of the development process and potential students. The readiness of the students in this system is not limited to being mentally ready, but also the readiness of their physical, emotion, personality, and etc. (Nor Hayati, 2005; Faridah, Naimah, Hamidah and Habibah, 2005). In line with the concept of knowledge-worker, trainees should acquire the knowledge and skills appropriate to their field. However, what is the form of knowledge that should be accepted by the trainees?

Moore (1999) stated that knowledge refers to facts, theories, procedures and social skills, strategy, style, worldviews and values of the workplace. The most important use of knowledge is created by knowledge practices, the understanding of knowledge and usage of that knowledge in life (Moore 1999). In many cases, instructors have to adjust the knowledge, skills, and attitudes to perform tasks required by the industry. There is a possibility that the trainees are asked to help its partners in implementing the new activities that are not known or expected as high work pressure or production lot (Blokhuys, 2006).

John Maynard and Vikki Smith (2004) in a study on how to improve the effectiveness of the modern apprenticeship training found that the characteristics of trainees play an important role in the success of the training. To be successful trainees, apprenticeship programs should seek advice and guidance. Through these advices and guidance, trainees will choose an appropriate field of their interest. The proposed combination variables suggest further investigations to build a strong training transfer theory.

Research by Alan Sparks (2009) listed the good characteristics of construction industrial trainees:

- Must possess industrial experiences
- Able to work with minimal supervision
- Loyal to the organization
- Flexible
- Training area- ready to learn new things

The research by Thomas and Donna (1993) on the characteristics of apprentice program trainees in America found that trainees need to be exposed to the

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job opportunities and technology. The trainees should also be exposed to more industries through collaboration with employers. High industrial-related exposure will demolish the skill gap that exists between the skills learned by the students and the real skills in industries. The research in ITI by Abd Hair et al (2003) found that many trainees have mastered the teaching theoretically but still lack when it comes to work experience. Thus, the providers of skills training institute should increase real work experience.

This statement is parallel with the findings of a local research by Nigam et al. (1990). In this rapid economy development, the Report of the Cabinet Committee on Training (Malaysia 1991), reported that the work force entering the labor market lack appropriate experience. The research found that lack of real work setting exposure can affect the transition process from learning environment to work setting as found by International Labor Organization (ILO) (2001, 2003). Nielsen (1999) supported this in his research that found the existence of a strong relationship between marketability, age, and gender and work experience in industries.

II. Research Question

According to Glaser (2004), researchers should explore the relationship patterns of behavior that occur within the scope of the research. Two key questions should be asked of any relevant or important aspects that happen and how respondents continued to resolve and manage the matter. The research conducted will try to answer the following research questions: firstly, what are the main concerns of ILPKL students to gain skills? Secondly, how do students in Kuala Lumpur Industrial Training Institute (ILPKL) continuously strive to obtain and maintain their skills for future career needs?

III. Methodology Sampling

Respondents were selected based on theoretical sampling in which we believe that those elected can contribute to the substantive area of the study. Selected sampling method uses the snowball method and is convenient. Respondents selected among the group of students started were excellent and able to provide information on research topics. Studies were conducted to achieve theoretical saturation when the number of respondents reached 32 participants comprising administrators, teachers, employers and industry supervisors as trainees. Specifically 15 of the respondents were trainees, two administrators, 10 instructors, and five industry employers/supervisors were interviewed. Respondents were selected from various areas of study offered at selected locations. A variety of individual perspectives was sought in various areas in order to see the diversity that exists. Explorations of different depths will give better meaning to the main concern studied and how it is resolved in different contexts.

IV. Data Collection

To achieve the objectives and answer the research questions set, we used three main methods of data collection i.e. interviews, observations, and document

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analysis. Interview sessions were conducted using a set of open interview questions, which we developed as a guide for initial questions before going to the general question of existence based on the responses. Interview sessions were conducted at various locations in accordance with the requirements of the respondents and typically took between 60-90 minutes depending on the time available to respondents. As a customary practice, respondents provided a letter of consent so that they can be interviewed and they are read their rights before the interview begins. In addition to the interview memos, notes of observations were also recorded for the researcher to reflect on the perceived situation and the concepts developed during the observation. Written memos exist in a variety of shapes and sizes, including memos during the formation of concepts. Document analysis was conducted on appropriate documents as it helps researchers gain more in-depth information about the basic social processes studied.

V. Data Analysis

Grounded theory methods were used during the process of data analysis. We started with writing memos after each interview was conducted, and after a while, patterns emerged and the memos could be categorized according to indicators, incidents, concepts, and categories. According to Glaser (1998), writing memos is a core process in grounded theory study. Ideas emerge during the coding process, data collection, and analysis as well as relationship codes that exist in theory during the process of writing the memo. Codes and categories that were formed according to our own synthesis based on emerging patterns. This is different from the common qualitative method based on the analysis of themes that have been formed earlier. The data was then analyzed using substantive coding involving open coding and selective coding (Glaser, 2004). The constant comparative method was run simultaneously in which we compared incident to incident, incident to concept, and concept to concept (Glaser & Strauss, 1967). Each concept that emerged was compared to other concepts. All of these processes were compared with each other to see the emergence of concepts that eventually formed the core categories of the study.

VI. Findings and Discussion

Character of the engineering trainee plays an important role in the social process studied. This is obviously, because the focus of the study is to look at the basic social processes that occur through the study and observation of the main issues surrounding the life of the ILPKL trainers and how they resolve the issue. The findings showed 68 characteristics of the trainees that emerged from the study.

This is consistent with previous studies showing that trainer characteristics are an important concept in the apprenticeship or vocational training system (Alan 2009; Guile & Young 1998; John and Vikki 2004; Jeniri Amir 2013; ILO 2001, 2003; Martin Lang 2010; Miller 1985; Moore 1999; Praat 2003; Nielsen 1999; Thomas & Dun 1993; UNESCO 2001). Figure 5.3 shows the main features of the trainer only to give a clearer picture:

Each of these emerging features has interconnected relations with God, ILPKL administrators, industry employers, trainee families, friends in ILPKL,

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community, industry and senior training supervisors in the industry. These relationships shape the attitude or characteristics of skilled trainers. Each of these relationships has its own unique and contributes to the different forms of individual trainees as well. This finding is consistent with the findings of Poortman et al. (2011) in their study found that the learning process within the apprenticeship training system would be successful if the three main factors were taken into account ie cognitive domain, social domain and emotional domain.

The relationship of the character of the trainer with God manifested in the form of confidence in qada and qadar (PE7), worship practices such as prayer and prayer for the well-being of life. The emphasis of the administrator (PT1, PT2) in the practice of prayer as an example as stated in the findings contributes not only to discipline aspects but also other aspects as well. Like the PE7 verse we are Muslims who are not the ones who decide. Maybe we have the chance to be a better person. See what happens positively as God's destiny to make us better.

When viewed from a macro perspective, interest characteristics appear as the first thing accepted by educators, administrators, trainers and even industry supervisors. The interest in entering ILP, the interest in selecting areas to learn, the interest in exploring the area, the interest in learning more professionally in the industry becomes the property of the interest category. The UPM Study (2012) which characterizes interest as an important process in ensuring public perception of the training system can be changed supports this finding.

A good curriculum and training system support the production of high quality apprentice training system trainees (Education International 2009; Maizam and Razali 2013; Mohamad and Nurhafiza 2011). The relationship between industries and training institutes that support each other will produce trainees that have skills suitable with the needs of the industry (City and Guilds 2008a). The resources management element such as financial management and apprehension of current development should be given priorities by the training institutions in order to produce knowledge workers (k-worker) that are strong in the future (Bekri et al 2011). Kilpatrick and Guenther (2003) in their research on partnership between industries and training institutions stated that this partnership factor exists due to a few reasons such as dissatisfaction of industries on the existing skill gap between industries and training institutions, the aspiration of the industries that aims to assist in achieving best practice in the skills development of new workers and to increase job opportunities apart from increasing career and training opportunities.

They also wrote that there are few existing relationships such as:

- The relationship between industries and training providers
- The relationship between customers and training providers
- The relationship between community and training providers
- The relationship between broker-customers and training providers
- The relationship between industrial researchers and training providers
- The relationship between government-industries and training providers
- The relationship between training providers especially government agencies

The findings show that the learning objective that is to learn the skills to get a job will encourage the trainee to work hard to learn the knowledge and skills according to the field of interest. For example, a trainer who wants to inherit his father's business (PE4) encourages the trainer to put his computer skills as a skill for his work. This is to continue the legacy of his family. The coach is obviously the goal and makes the trainer work hard until chosen between the best coach of the field (Elena 2000). Fishben and Ajzen (2005) that the interest in engaging in an activity is based on one's knowledge, observation and other information obtained from the observation support this. The formation of these attitudes and interests as well as the perceptions of an individual is influenced by his family (Faridah et al. 2005).

Interests driven by goals and motivations if not followed by good discipline will affect what they want to achieve. ILPKL emphasizes disciplinary factors as one of the important factors in its training system. It is driven by the premise that disciplined trainers at ILP will also have the same attitude in the industry. If this disciplined attitude is maintained until then, the quality of the trainer issued by the ILP will be accepted and acknowledged by the employer. Disciplines are seen from various properties such as timely completion, time of attendance to work, arrival to work, working hours and according to predetermined instructions.

Disciplinary violations set out in the regulation cause the trainee to be subject to action. This educative act is to develop a trainer who has the potential of a quality industrial worker. This is because of the employer's complaint that there are ILPKL trainers who have disciplinary problems. However employers (PEI1 and PEI2) do not blame ILPKL absolutely because they see that the problem exists because of the individual's attitude not because of the ILPKL training system. However, I see that it should be emphasized and emphasized continuously as trainers consider the effort to emphasize the values of discipline and regulation as warm-ups of chickens. While teaching and learning are made easier with the same standards, uniform syllabus and evaluation systems, the development of soft skills among trainees is still a difficult task as it involves elements that are less quantifiable and vary greatly with each individual according to character and background behind them (Roslina Shakir, 2009).

Internal factors such as passion, motivation, discipline, vision and mission will create trainees who seek to acquire new knowledge and skills, have positive and clear thinking, have a high learning commitment. These positive features are capable of driving other factors to gain as much experience and skill as possible. Through positive attitudes as well as problems that occur like a troubled machine, troubled friends will be considered a challenge. This makes positive personality factors aiding the success of apprenticeships (Abd Hair et al., 2004; Dam 2004, Dunning 2010, Gainer 1988, Harvey 2001 and Nilson 2010).

The above factors also make the trainer a high endurance to face any challenges during the teaching and learning process. The inherent resilience is also a catalyst for the dedication spirit to seek new knowledge and skills. The trainer takes his own initiative and is willing to change according to his will to learn and change in a better direction. The learning process also requires trainers to have the spirit of cooperating with one another through cooperative learning. They should work

Copyright reserved © J.Mech.Cont.& Math. Sci., Special Issue-1, March (2019) pp 185-193 together in workshops, in classes, as well as in dormitories to adapt themselves to challenging learning environments. The findings of this study coincide with the characteristics of cooperative learning referred to by Zaenab et al. (2004), Cohen (1994), and the Australian Government (2006). This method encourages trainees to always work together to achieve the goal of a predetermined learning (Collins et al., 1991).

ILPKL teachers and administrators to enable trainees to perform their tasks more effectively should support this cooperative learning process. They can also communicate among the various races, cultures, interests, sexes, geographical backgrounds and that in order to strengthen the communication skills. It is clear that these skills are the skills needed by the industry today (Ab. Rahim & Ivan 2007; Fitrisehara 2009; Muhammad Sattar 2008, 2009; Jeniri Amir 2013 and Safarin & Kamarudin 2004).

VII. Conclusions

The training process must improve and strengthen basic academic skills of trainees, especially when the training institution houses trainees who are low academic achievers.

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