Training the Construction Workforce: A Case Study of Malaysia

Hassan, F.
Centre of Excellence, MARA University of Technology
(email: padzil037@salam.uitm.edu.my)

Samad, Z.A.
Quantity Surveying Department, Universiti Malaya
(email: zulkiflee 1969@yahoo.com)

Hassan, S.
Quantity Surveying Department, MARA University of Technology
(email: sabaria@salam.uitm.edu.my)

Che Mat, M.
Quantity Surveying Department, MARA University of Technology
(email: masnizan@gmail.com)

Isnin, Z.
Quantity Surveying Department, MARA University of Technology
(email: zarinasf@gmail.com)

Abstract

Imbued with the conviction that training is central in increasing the numbers of competent construction workforce, many initiatives were mooted by the Malaysian construction industry to improve training. Notwithstanding this and the training emphasis in the Construction Industry Master Plan (CIMP), there have been frequent arguments that some of the training provisions offered are somewhat inadequate and ineffective.

Meeting the training needs of all within the construction industry is very complex. The industry is populated with the numerous variables of types and size of construction organizations, projects and people that tend to render the training ineffective. This paper reviews and analyses the training offered to the Malaysian construction workforce. The training provisions offered are discussed together with the challenges and opportunities. A holistic conception of training underpinned with the concepts of „Best Practice” is offered as insight for the industry to further improve the training for the workforce.

Keywords: construction industry master plan (CIMP), training, construction workforce, training best practice
1. Introduction

This paper presents a critical analysis of the training offered to the Malaysian construction workforce. It begins with an overview of the industry, the construction workforce and training offered the workforce. This is followed by the discussion on the significance of understanding the inter-relationships between education, training and continuing professional development (CPD). The problems that can arise when these concepts are not holistically appreciated are also highlighted. Initiatives taken by the industry to improve and promote more training is presented together with the challenges that confront the initiatives. The suggestions on the way forward for the industry improve the provisions for training the workforce is offered at the end of the paper.

2. The Malaysian construction industry scenario

Training is essential if performance improvement of the Malaysian construction workforce is to be achieved. Training lies at the core of creating, maintaining and developing the construction workforce, who contribute significantly to the achievement of construction projects objectives. In the Malaysian construction industry, this is set within an industry that is challenged to change. This is driven significantly by a growing trend among clients, particularly from the private sector to demand and emphasise even higher quality standards, construction within budget and tighter completion dates (Fadhlin, 2004; MGCC, 2009). Collectively with the other construction clients, they influence the choice of technologies through the demand for faster construction time, better quality, cost and value for the projects with reducing running costs.

It is not easy to provide effective training to the fragmented construction workforce in the Malaysian construction industry. There are over 64,000 contractors, a few thousand client and consultant organisations. Together they undertake a multitude of construction projects, ranging from small repair and maintenance work, to billion dollar specialist process plant and infrastructure projects.

2.1 The construction workforce

Problems related to construction and the construction workforce is varied and recurring. These were exemplified NIOSH (2010) who reports that construction industry continue to record the highest number of workplace accidents and there were 1,178 fatal work injuries reported in 2007 (NIOSH, 2010). Mohd. Nazir and Noor Zarina (2006) observe that problems arising from payments and disputes are getting more serious. Abdul Aziz et al (2008) note that the problems of construction quality are a continuing problem. Similarly, Sambasivan and Wen Soon (2006) observe that problems of delay are recurring. MBAM (2010) underlines that the inter alia problems of performance, cost and time overruns and quality deficiencies, and those which relates to the construction workforce has led to a leak in the economy. This has resulted in the repatriation of earnings by foreign labour as well as numerous ensuing social and health problems, several major catastrophes, and the low productivity of the construction industry.
The construction workforce has been largely traditional and labour intensive and they come from variable backgrounds with varying skills and qualifications. The traditional response to the shortage of skilled labour, have been to increase remuneration and/or poaching of workers from others (Hassan, 2009). In many instances, in the face of inadequate supply of skill labour projects have had to make do with inferior labour or at the extreme of cases, work has to stop altogether (Salleh and Abdul Aziz, 2001). The solution to overcome the shortage of labour has been to employ foreign workers. MTUC (2006) reports that there are easily over 500,000 foreign construction workers within the industry and most have very little training or competency to work on construction projects. The numbers of Malaysians working at the construction site especially at the operative level are critically diminishing replaced with imported cheap and unskilled workers (Abdul Aziz, 2001).

The construction workers mostly work in small firms or trade sub-contractors. They work longer hours but their pay is around the average salary of other industries. In contrast to the other developed countries such as Japan, Singapore, South Korea, Australia or the United Kingdom (UK), there are signs of alarming gap between skills of the work force in the Malaysia and those abroad. In these countries more pre-fabricated construction is practiced resulting in unskilled workers becoming more marginal as employers increasingly employ only trained and skilled workers to work. On the contrary, the Malaysian construction workforce tends to have very little skills, qualifications and training (Jaafar et al, 2007; CIMP, 2010).

2.2 Issues of training the construction workforce

With the exception of a few large construction based companies who provide in-house training, construction managerial and supervision training at the industry level are mostly offered by the a few government agencies (Hassan, 2009). Complementing the managerial and supervision training are the craft-based training at the operative level offered by the 20 training and vocational institutes scattered throughout the country (Abdul Aziz et al, 2008). Despite this, demand has far outstripped supply. The government have tried to motivate the private sector to help generate skilled and semi-skilled manpower by offering incentives but response was modest.

Hassan (2009) attributes this problem as arising from most construction organisations that are unable or unwilling to invest in developing their workers. Larger firms mostly subcontract much of their jobs and this has led to neglect to the much needed development and training of the workforce. Prior to the launch of Construction Industry Master Plan (CIMP), which is an initiative for the industry to reform, critics have been frequent in pointing out the failings of training. Salleh and Abdul Aziz (2001) and Jaafar et al, (2007) found training on-offer within the industry still very inadequate and resources allocated to training was very low. On-the-job training is considered important by employers, but whilst they demand site-proven skills, many are reluctant to provide the required work experience for trainees.
Training, education and continuing professional development (CPD)

Understanding the inter-relationships between training, education and CPD is a fundamental starting point in the provision effective training. At the onset the basis for conceiving training within the context of workforce development must be in place, and this is embraced also within the perspective of education and Continuing Professional Development (CPD) (Zuhairusse et al, 2009).

3.1 Understanding training, education, training and CPD as a whole

Appreciating the similarities and differences between training, education and CPD, especially by the parties responsible for the training design and delivery can make a significant difference to the effectiveness of the training strategies. There is a general tendency in the construction industry to view the education, training and CPD as separate (Hassan et al, 2009). Education is frequently viewed as occurring primarily in the school system and system of higher vocational education. Training is often viewed as conducted by specific companies or organisations to meet a particular need which is often occupationally differentiated. In construction, training can effectively conducted on-the-job or through self-directed models, manual or curriculum. This may be part of the educational endeavor, but may equally comprise an element of an industry level or in-house management training or CPD program. CPD is commonly viewed as the means by which members of professional associations maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives (Eraut, 1999; Cheetham and Chivers (2001). CPD involves the conscious updating of professional knowledge and the improvement of professional competence throughout a person's working life, keeping up to date and continuously seeking to improve to optimise a person's career opportunities.

3.2 The concern

Education, training and CPD are related to learning and must not be separated. There can be no education, training or CPD when there is little learning (Mullins 2002, Jarvis and Griffith, 2003). Understanding on what is to be learnt; how learning can best take place and how the learning outcomes can be measured are the critical question which educators, trainers and CPD providers should be concerned with. All too often, in the pursuit of time, meeting training numbers quota (usually when meeting Key Performance Indicators or KPI targets), meeting cost and the wake of inadequate training personnel, this consideration is pushed to the sidelines

When deciding the training strategy, there is also a tendency to polarise education, training and CPD, especially when identifying parties and what they should do in the provision. In many circumstances, this polarization is not helpful for educators, trainers, and CPD providers to understand their roles and connectivity (Dewey, 2005). This disconnection has and is still occurring. Today, as processes and technology changes, the scope of professions is fast changing, distorting boundaries separating job and professions. It cannot be assumed that educational, training and CPD programs can
adequately be covered along traditional mode anymore. The complexity, quantity and quality of knowledge, technology, skills and competency required, especially of those in the upper level categories of the construction workforce is changing very fast, exacerbated by the speed at which information is transferred and exchanged. These have a very significant impact on how the workforce can learn. They must now cope simultaneously with large databases, integrated management and information systems as well as traditional manual systems.

The view that education, training and CPD as separate is now getting to be more outdated as they no longer have clear boundaries that they once did. Education, training and CPD providers in the Malaysian construction industry should start to address this concerned and focus on the learning the dynamics of education, training and CPD, to address the issues of relevance and practicality in terms of what they cooperatively provide.

4 The challenges

There has been a very significant increase in training since the launch of CIMP, but critics continue to argue that knowledge and skill gaps are persisting. Prior to the establishment of CIDB and the launching of CIMP, training within the construction industry was very poor and there were little evidence if this has significantly improved. Abdul Aziz (2001) observes that most of the training on offer very fragmented and uncoordinated. Hassan (2005) notes that in the developed countries in Europe where the workforce is allowed as much as 14 man-day training/year, the Malaysian construction industry have an appalling rate of less than one man day training/year. Even when there were provisions for training in technology transfers programs, there was very little learning (Hassan, 2009). In many instances in the guise of technology transfer training initiatives, training was limited to sub-contractors and suppliers showcasing their products with little emphasis for performance improvement of the local workforce, let alone to benefit to the projects, the stakeholders and the industry as a whole. It was often alleged that even when training was offered, it is short in meeting the training needs. The frequent claims are the training when offered is not supporting the academic and vocational provisions with the right training or vice versa; not providing the opportunity to promote the trainees’ career enhancement; reflecting the actual nature of work carried out in construction projects, and; accommodating changing practices within the industry. The culmination of the above in-turn tends to lead into the thinking that there is little promise for career in construction (Hassan, 2009).

4.1 The Construction Industry Master Plan (CIMP)

In response, the Construction Industry Development Board (CIDB) as the organization entrusted to promote construction training at the industry level, have implemented strategies to address this problem especially since the launching of the CIMP. Construction related training courses, partnership training arrangements with the industry, encouraging training organisations to conduct the training and the introduction of the Construction Continuing Development (CCD) scheme have
been specially underlined as the initiatives that must be promoted in the CIMP (CIDB, 2008). Over and above the training courses promoted, CIDB has begun to take initiatives to strengthen the vocational, academic and professional provisions by working more closely with the industry stakeholders and educators. Emanating from this, various activities and programs were introduced to consolidate the vocational, academic and professional provisions through the formation of Working Groups, Task Force, Special Interest Groups (SIGs) and Special Research and Development (R&D) projects with professional institutions and associations and with institutions of higher learning.

4.2 The Contractor Continuous Development Program (CCD)

Together with training courses developed by CIDB, a key initiative introduced to overcome the poor response to training amongst contractors is the Continuous Contractor Development (CCD) Program (CIDB, 2008). With the CCD Program, contractors are required to participate in the training courses to attain CCD points. It is a requirement now that contractors must get a certain number of points to renew their license. With the CCD initiative, more construction workforce can be trained. However, the industry needs to be mindful of the extent to which such „command and control” approach will promote sustainable training. Sustainable training culture within a large fragmented construction industry like Malaysia requires a holistic approach and the benefits must be visible to all the stakeholders. In the final analysis, the questions of: “How have the training benefitted the parties?”, “What was there for the trainees?”, “How have construction projects improved with the training?”, and “Was it worth the effort?” are the real questions which the industry must answer.

5 The way forward

A significant way forward for the industry to further improve organise the training for the workforce is to re-learn the current training provisions. This necessitates the sound appreciation of the right philosophies and dynamics of the training and the variables that impact its processes. This must be appreciated within the context of the industry, organisational setting and the variable elements that surround the project. In line with the situational nature of construction projects, much of the construction workforce training needs to be designed at the workplace environment. This is where the training effectiveness will be judged.

5.1 The right appreciation of training

A common simplistic approach to training is to design a training course, invite the participants, run the training and assess them at the end of the training, and upon completion a certificate of attendance/competency is issued. However most often when once undertaken, the training is forgotten and the next training is planned. Sustainable and effective training does not operate on this mode. Key to the effectiveness and sustainability of the training is the „impact” of the training, and this must be measurable (Cross, 2006). Organisations sending their people to the training are
spending money and will be losing their services during the training period. Certainly the return that they will get from the training investment will be in question. Effective trainings should focus to benefit all, i.e. the trainees, their job and their employers, and cumulative, these drives up performance at the industry level (Hassan, 2005).

Only continuous training can assist meeting the changing demands at the workplace as knowledge gained has a limited useful life span (Bereiter, 2002). This must be developed on sound understanding the learning process. If the training is successful, it will speed up the learning process. Training is focused to make the individual proficient by instruction and practice; and is a job specific form of education which can be general or organisation specific but does not necessarily relate to the job that the individual undertakes (Bee and Bee, 1999).

### 5.2 Training alone is not enough

Training alone is not powerful enough to develop people in organizations or the industry (Richardson and Wolfe, 2001; Reid and Barrington, 2004). Training is not the remedy for problems of faulty organizations or training employees who do not wish to learn. Similarly, accepting training as the process to improve performance and competency on the job alone will not promote sustainable training culture and willing participation. Training must be an integral part of the organisation’s development strategy. The industry and the organisation must place adequate emphasis on the appreciation and development of its people to totally benefit from the training. There is more to be done in this area in the Malaysian construction industry. Central to this is the consideration for the welfare and career well being of the trainees after the training, which has very much been in neglect. All too often this is forgotten. Widespread sub-contracting practices, poor consideration of the human resource, the disconnection between the national vocational, academic and professional framework are obvious contributors to this.

### 5.3 Consider ‘Training Best Practice’ approaches

In the complex industry scenario which is confronted with the challenges discussed, there is a critical need for the workforce training to be developed based on a framework that adopt different methods and processes in different circumstances while maintaining focus on learning and adoption of innovation into the training process. For this to happen in training, the right paradigm in managing the training must be in place.

Training needs to be conceived as an evolving cyclic process which can be classified into: (i) Training needs and Training Needs Analysis (TNA); (ii) Training Design; (iii) Training Implementation; and (iv) Training Evaluation processes. Findings derived from the each process needs to be considered within the next training cycle to ensure a continuously improving training provision. A framework for conceiving this developed by Hassan (2008) is shown in Figure 1.
5.3.1 Training needs and Training Needs Analysis (TNA)

Training needs analysis (TNA) is a vital part of the training design process which endeavour to investigate the performance „gaps” of people in their job to identify what needs to be learnt. Without TNAs, there can be no way of knowing if the training process is correctly designed. For TNAs to be holistic, the three processes of: (i) identifying the range and extent of training needs from business needs; (ii) specifying the needs precisely; and (iii) analysing how best training can be carried out must be observed. This should be carried out at the organisational level, job-level and person level within the organisation to be accurate. TNAs need to be carefully articulated. The „supply-led” approach which is usually trainer-driven can be inaccurate as trainers could lack management experience or knowledge on real operational issues; the „demand–led” approach is often too business orientated and usually emphasises on bottom-line which often leads to neglect of employees needs; the „process-led” approach tends to be too localised for divisions or departments for the training processes to be introduced in an effective manner; and „trainee-centred” approach, which relies on self-assessment, has drawn strong criticism as they often reflect employee wants instead of needs. An integrated approach combining these methods to annul out any weakness would be ideal but can be expensive and time-consuming.

Figure 1: The best practice training framework (Hassan, 2008)
5.3.2 Training design

The design stage of the training follows the TNA stage. During this stage, it is very important that training method/s selected must match the training needs, and the training strategy and planning must be appropriate to the training objective and circumstances. The key parties that must be involved in the training design should include the organisation’s representative, the line management, the training manager and/or the training officer and the trainee. The application of the training procedures must be in the hands of personnel who are able to apply a variety of competences in flexible ways to mesh with the organisation’s operational considerations.

The decision to determine the appropriate training strategy should be based on the training compatibility with the objectives, estimated likelihood of transfer of learning to the work situation, available resources and trainee related factors. From this, the training can be designed to be on-the-job, planned organisational experience, in-house programs, planned experience outside the organization, external courses, self-managed learning, or a combination of these approaches. In contrast to traditional training, the design of competence-based trainings must be based on explicit and measurable performance because it needs to reflect the actual expectations and performance in the work role.

5.3.3 Training implementation

Training implementation is putting the training design into practice. The mechanistic „traditional” training approach has now greatly changed, replaced with the modern approach that emphasise more of coaching and facilitating. The training spectrum may vary from highly directive to free-learning, guided-learning, lecture/discussion, presentation, instruction and conditioning for individuals or as a group. The training needs to be different for different people but concurrent with the different kinds of tasks they undertake. In most situations, formal training entails deliberate and structured presentation of experiences and must be related to its purpose. The training policy and plan must be the key reference for implementing training. Task force exercise, case discussion, simulation and games; role-play exercise, group discussion, individual exercise, presentation/lectures and behavior modelling are the common training methods, and may be carried out through external or internal providers. The trainer must be committed and equipped with wide-ranging toolkit of ideas, techniques, methods and approaches which can be adopted as and when most appropriate.

On-the-job training is often very effective, flexible and relatively low-cost, but can be ineffective if it is too detached from the actual job-environment or, if it does not follow guidelines of standard training programs. Competence-based training often have modular outlines. It must take into account occupational constraints such as availability of target groups, training premises, possible need for several programs and the atmosphere at the job location. The training activity must be realistic to the preferred learning styles of the target group. The delivery of training or learning needs to be clearly focused on what happens at the job place and not just what happens during the learning/training events.
5.4.4 Training evaluation

Training evaluation is the assessment of the total value of a training system, which considers the training course or program in technical, social as well as financial terms. It attempts to measure the overall cost benefit of the course. It must encompass a systematic collection of data relevant to the selection, adoption or modification of training and developmental activities, and must be an on-going process from which continuous corrective action can be introduced to ensure an ever-improving training. There are differing views as to who should be evaluating the training, but most views tend to agree that senior managers, line managers, training managers, trainers and learners must be included. It is imperative that evaluations must be impartial. Evaluation should be done before training starts. A baseline data must be established to measure the training program response, on-the-job action, business-focus results and the organisational impact of the training. Post-training evaluation is very important as the training itself is wasted if employees cannot transfer what they have learned.

Training effectiveness is the sub-set of evaluation and is the desired outcome of the training evaluation. The explicit and implicit goals of training should be laid down in the cost and benefits analysis. The criteria for determining the extent of indirect and social cost or benefit are very subjective. Training effectiveness is a value judgment, which is contingent upon the context of training; the baseline criteria set as the explicit and implicit training goals; and the accomplishment of these goals. The professional way to determine training effectiveness is often to validate training holistically by taking into account outcomes from both the organisation and the individual.

5 Conclusion

In culminating the evidences and discussions, this paper posits that a holistic approach to the provision of training of the construction workforce is fundamental. Addressing the need to effectively train the construction workforce necessitates the appreciation of the dynamics of the learning, context within which the training is decided and the factors that impact the training. The foundation from which the training was developed must be correct. For this, CIDB must be credited for the appreciation these influences as exemplified from their continuing engagement in research on training and by drawing valuable experience from successful examples.

The training of the Malaysian construction workforce is improving, but it must continue to improve. The pre-requisite to this is the appreciation of the training as a holistic integrated process which is interlinked with education and CPD, and contextualized within the workforce personal, organisational and project situational settings. This must be bonded together with sincere appreciation of the contribution of the construction workforce to the industry and to provide a better career for the workforce and their future.
References


