

# The Framework of Education and Training for Quality Management in Small Medium Enterprises

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## Abstract

*This study initially presents the importance of education and training for quality management within small medium enterprises (SMEs) in Indonesia. Quality management in SMEs is the most relevant topic to be discussed because of its significant contribution to SMEs in developing partnership with large company. The partnership is known as subcontract. In order to make sustainable partnership with large company, SMEs should continually improve of their products and services through implementation of quality management principles. As we know, quality management is a management philosophy which seeks continuous improvement in the quality of all processes, product, and services of an organization. Introducing quality management concept and practices require an education and training effort. There are several reason for this matter, namely: (a) to inform people of what quality management, how it can be introduced and what it can do, (b) to develop appropriate knowledges, skills, attitudes, and values relating to quality management, (c) to elaborate the tools and techniques of quality improvement, and so on. Thus, investment in education and training is a critical factor in the success of quality management implementation in SMEs. Finally, the papers will give insight into a brief framework of quality management education and training in SMEs e.g. purpose, content, approach, model, learning style, and evaluation process.*

**Keywords:** *SMEs, Partnership, Education and Training, and Quality Management*

## Introduction

Small and Medium Enterprises (SMEs) are the most relevant topic to be discussed in Indonesia because of their significant contribution to the economic and industrial development of any country (Husband and Purnendu, 1999; Mahemba, 2003). The important role of SMEs in Indonesia is not only limited as job provider for the vast majority of the people, but also very vital in combating poverty, reducing unemployment, distributing income, and increasing non-oil export.

In today's globalize economy, competition is becoming ever more intense. SMEs are trying very hard not only to satisfy their customer's needs but where possible exceed them. This can only be achieved through

cost reduction, improvement in product performance, increased customer satisfaction and a constant effort towards world class organizations. In order to survive and grow in the future, it is essential for SMEs make partnership with large company. According to Rahmana (2011), the partnership had implication for increasing of SMEs sales significantly.

To pursuit effective partnership between SMEs and Large Company, issues of the quality has become the most important thing. SMEs have to deliver high quality product and services according to customer desires. Baykasoglu et. al (2004) and Cheng et al. (2000) stated that to be competitive, SMEs should restructure and reorganize in order to deliver customer desire of high quality product. One of the approaches should be used not only by large companies, but also SMEs is quality management implementation.

Several advantages of quality management implementation at SMEs are increasing customer satisfaction, increasing employee awareness of quality, improving organizational performance, and achieving organizational effectiveness. Implementation of quality management needs a sequential process. Irianto (2005) stated that in the term of sequence, the process of change in quality management implementation includes the development, evolution, and construction of a quality management system, the internalisation of the system into practices, the improvement of the system, and the possibility of its decline as time elapses. Taylor (1995) characterises the process of implementation as a cycle of introduction, adoption, and adaptation. Introduction involving the development of understanding of concept and principles, building motivation, and defining the measurable objectives in order to gain commitment for adoption. Adoption involving the preparation and planning for developing the mission and putting it into operation. Adaptation involving the monitoring, adjusting, and improving re-alignment in response to difficulties or barriers in which understanding is important.

Rahmana (2011) concluded that Developed quality system had the implication that SMEs should focus on customer. This led to management to compose programs in developing quality system i.e. improving human resources capability, developing quality circle, inspection in process, and improving customer service. Quality management implementation is more than simply installing systems and procedures, it is also about cultural change (Kanji and Asher, 1993). Introducing quality management concept and practices require an education and training effort. There are several reason for this matter, namely: (a) to inform people of what quality management, how it can be introduced and what it can do, (b) to develop appropriate knowledges, skills, attitudes, and values relating to quality management, (c) to elaborate the tools and techniques of quality improvement, and so on. Thus, investment in education and training is a critical factor in the success of quality management implementation in SMEs.

## **Education and Training**

According to Vermeulen and Crous (2000), some authors emphasized that education and training are the most importance thing to transfer knowledge and skill about quality. Birds (1993) sees training as important in order to give employees the necessary knowledge to bring about quality improvement across the company. Batten (1992) state by the following word: "Train, Train, Train!" to describe how importance the education and training are. McDonnell (1994), Schonberger (1992), and Riley (1993) declare that training as fundamental in transforming the workforce so that it can function in demanding quality management.

## Methods of Training

Generally, training methods can be classified or categorised as either on-the-job or off-the-job. Tennant et. al. (2002) stated On-the job method is the most frequent method adopted, where the learner develops skill in the real-work environment, by actually using the same machinery and materials during the training as they would when actually carrying out their work post-training. Coles (2000) implied that it is an effective method, on account of the learners apply their training in real-time rather than sitting in a classroom environment, and forgetting what they have learned when they return to their work. However, off-the-job training provides opportunities to widen the boundaries of the teaching and can often be a useful initial step ahead of on-the-job training.

## The Training Model

According to Vermeulen and Crous (2000), there are four characteristic features to ensure successful training, namely:

- (1) Training must be viewed as a continuous process.
- (2) Training must be focused so that people receive appropriate course at the appropriate level of their needs.
- (3) Training must be planned for the future to include the development of total quality skills and techniques.
- (4) Training materials must be made customized to suit the particular organisation.

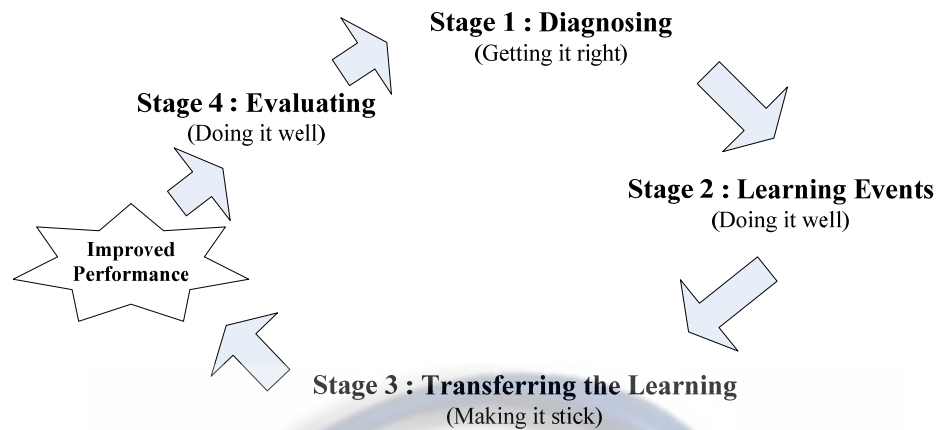
There are several quality training model that has been implemented. Armstrong (1988) defined the systematic approach to training as a simple four stage model, namely: (1) Define training need, (2) Decide what sort of training is required to satisfy these needs, (3) Use experienced and trained trainers to plan and implement training, and (4) Follow up and evaluate training to ensure it is effective. On the hand, Jones (1985) stated a simple three stage model for describing the training process. It was based on the following concept: (1) Getting it right, (2) Doing it well, and (3) Making it stick.

Two models explained above are clearly rather simplistic in their approach. Armstrong noted that his model placed insufficient emphasis on the responsibilities of managers and individuals for training. (Oakland and Robin, 1995) explained that as training is a continuous process, not a single event, and because total quality is about continuous improvement, more suitable model is one that is cyclical in form. The quality Guru, Deming, has developed a simple systematic approach to problem solving, known as plan-do-check-action (PDCA) cycle. It consist of four steps in problem solving: plan the purpose, the desirable objectives and the use of data, do, or carry out the planned act, check and observe the effects of what was done, finally, study the result and act on this information.

Jeffries et al.(1992) developed a four-stage model specifically for the quality process (depicted on Figure 1). They saw this model as fundamental for helping people learn. Kenny and Reid (1985) also expanded the systematic training model to a more detailed, cyclical from to define what they termed planned training. The following steps of this models are:

- (1) Identify and define training needs
- (2) Define learning requirement
- (3) Define objectives of training

- (4) Plan training programmes

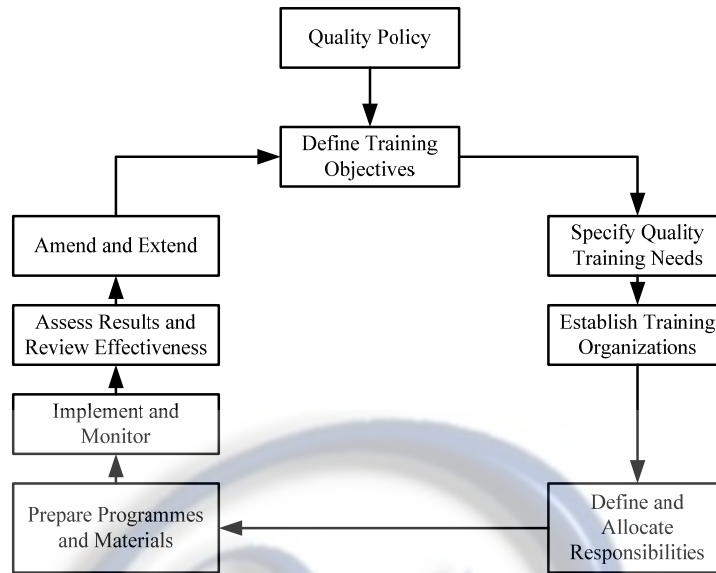


**Figure 1.** The Quality Learning Process  
(Source : Oakland and Robin, 1995)

- (5) Decide the training resources: techniques, facilities, locations, and trainers
- (6) Implement the training
- (7) Evaluate the training
- (8) Amend and extend training as necessary.

Oakland and Robin (1995) developed a comprehensive quality training model, as depicted at Figure 2. The consideration of this model was in the form of a cycle of improvement. Oakland and Robin (1995) stated that the communication of a sound quality policy expressing the organization's approach and commitment is a fundamental requirement of quality management. The stages of quality training by Oakland and Robin consist of:

- (1) Define the objectives of training. From the quality policy and through the senior management, objectives must be clarified and priorities set, specifying as clearly as possible what skills and knowledge need to be learnt and what behaviour is required. The objectives must be realistic and attainable.
- (2) Specify quality training needs. Assess and clarify specific quality training needs such as who and how many need to be trained and what resources are needed (time, money, location, people, etc.)
- (3) Define and allocate the responsibilities for training. The extent to which training will be provided from within the organization or by external consultants must be decided, together with the division of responsibility within the organization for line management, quality management, etc.
- (4) Prepare the programme and material. In order to meet the needs and objectives it is necessary to use the right combination of techniques and locations
- (5) Implement training. Using the most appropriate methods and techniques, backed by commitment and flexibility, implement to enable trainees to acquire the skills, knowledge, and behaviour to fulfil training objectives.



**Figure 2. Quality Training Cycle**  
(Source : Adapted from Oakland and Robin, 1995)

- (6) Assess the result and review the effectiveness of training. The effect of training should be monitored and the impact of training assessed to determine the extent to which the learning objective have been achieved. If quality training is not valued and built upon, its value will be severely reduced.
- (7) Amend and extend as necessary. Decide on the extent to which the planned training programme needs to be improved and how any other training requirements may be satisfied.
- (8) Establish a training organization. The organization must become committed to the training ethic, with overall responsibility for quality training.

### **Content of Quality Management Training Programme**

The content of quality management training programmes normally include: introduction to quality management, communication skill, problem-solving techniques, use of quality management tools, quality service to customer, barriers to quality management, commitment in quality management, and making quality management permanent, shown at Table 1. Quality management training programmes should therefore centre round the basic principles of understanding the different processes in organization, the relationship between different processes and eventually the improvement of these processes (Vermeulen and Crous, 2000).

**Table 1:** Quality Management Training Programme

<b>Module/Techniques</b>	<b>Top Management</b>	<b>Middle Management</b>	<b>Operators</b>
(1) <b>Introduction to Quality Management</b>	X	X	X
(2) <b>Communication Skill</b>	X	X	X
(3) <b>Problem Solving Technique</b>	X	X	
(4) <b>Use of Quality Management Tools</b>	X	X	X
(5) <b>Quality Service to Customer</b>	X	X	X
(6) <b>Barriers to Quality Management</b>	X	X	X
(7) <b>Commitment in Quality Management</b>	X	X	X
(8) <b>Making Quality Management Permanent</b>	X	X	X

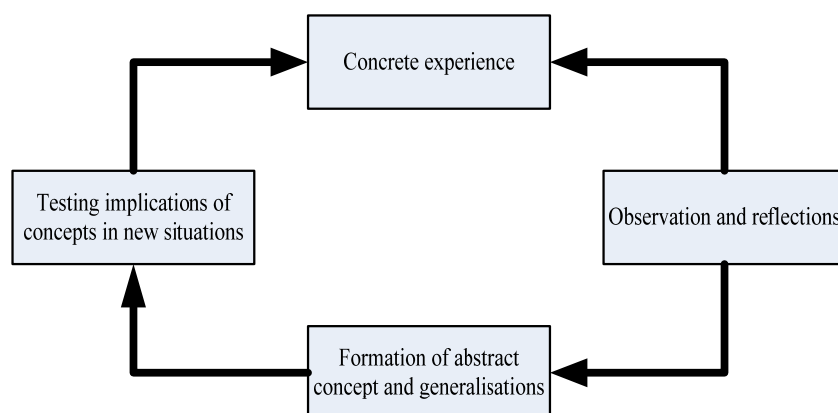
### Learning Styles

According to Knowles (1990), there are two models for learning namely pedagogy and andragogy. Pedagogy is defined as the process of teaching children, meanwhile andragogy is the process for teaching adults. The distinction between the two models is shown in Table 2

**Table 2.** Distinction between pedagogy and andragogy models

<b>About</b>	<b>Assumptions</b>	
	<b>Pedagogy</b>	<b>Andragogy</b>
<b>The learner</b>	Dependent personality	Increasingly self-reliant
<b>Role of learner's experience</b>	To be built on	Resource for learning
<b>Readiness to learn</b>	Determined by age	Developed from life tasks
<b>Orientation</b>	Subject-oriented	Task or problem-centered
<b>Motivation</b>	By external rewards	Internal incentives/curiosity

Source : Knowles(1990)



**Figure 3.** The experiential learning model

Education and training at SMEs should carry out andragogy model because they are andragogical learners and have specific assumptions about their learning expectations. For this matter, there are several models and concepts when designing teaching methods for andragogical learners. Kolb (1984) explained a concept known as experiential learning, where it is believed that experience plays a central role in the learning process. Figure 3 show that learning process consist of four-stage cycle. The model relies on here-and-now concrete experience to validate concepts, where immediate personal experience is the focal point for the learning process.

### **Training Measurement Models**

Evaluation is an integral part of training. It indicates the overall effectiveness of training in achieving objectives (Oakland and Robin, 1995). The process of evaluation, according to Armstrong (1988), as “ any attempt to obtain information (feedback) on the effects of a training programme, and to assess the value of the training in the light of the information”.

There are a number of models for measuring effectiveness of training. Two of the developed models are known as Kirkpatrick and CIRO.

- (1) Kirkpatrick Model. There are four levels represent a sequence of ways to evaluate training programmes. Each level is important and has an impact on the next level (Kirkpatrick, 2008). This model is widely accepted which can be used in the manufacturing industry sector. The levels within this model namely:
  - a. Level 1 - Reactions
  - b. Level 2 - Learning
  - c. Level 3 - Behaviour
  - d. Level 4 - Results.

The strength of this model is the focus on the change in behavioural outcomes of learners involved in the training programme (Tennant, 2002). However, the weakness of this model is not consider the measurement of area before training, such as:

- a. Objectives
- b. Contents
- c. Equipment needed for training

- (2) CIRO model. This model widely used in current business. The elements of this model are:
- a. Context
  - b. Inputs
  - c. Reactions
  - d. Outcomes

The strength of this model is the focus on measurement both before and after the training, so the objectives (context) and the training equipment (inputs) are considered. However, the weakness of this model is not measuring behavioural change.

**Table 3 :** Comparison between the Kirkpatrick and CIRO training models

Criteria	Kirkpatrick	CIRO
<b>Focused areas</b>	Reaction Learning Behaviour Result	Context Input Reaction Outcome
<b>Strengths</b>	Identify behavioural change with an emphasis on the change of ability and apply to jobs	Measures pre-and post-training to establish whether the objectives of the training were achieved
<b>Weaknesses</b>	No focus on training objectives, only post-training measures	Requires more training resources and has no behavioural focus

Source : Tennant, et.al. (2002) and Kirkpatrick (2008)

## Conclusion and Recommendation

Facing the competitive business world, SMEs should become a quality organization. A traditional approach to quality no longer desirable. The best way to overcome the quality problem in SMEs is through the implementation of quality management in order to leverage product and process quality. To implement quality management, it is necessary to identify the basic activities affecting management and system. The approach to deal with these activities affecting management and system is through training and education. The quality management implementation is an ongoing process and therefore training and education should also be continuous.

It is necessary to plan training and education for quality management, began with defining the objective of training, implementation of training , until evaluation of training. Andragogical approach is the best way in designing learning style, especially with using experiential learning model. Measurement of effectiveness for training model is needed to show how the validity a training model in building human resources competency that consist of three aspects, namely: knowledge, skill, and attitude.

Quality management implementation in SMEs will only be successful if all employers, including top management and other managers, are thoroughly educated in all aspects of quality. Recommendation for this matter will be given to the following:

- (1) The development strategy and plan of training and education for quality management are a crucial factors in making training and education successful.
- (2) Training and education for quality management is not only for operator but also for all employers, including top management. Top management should receive quality management training and education first.
- (3) Expert outside consultants should be hired if internal expertise is not available.
- (4) Training and education for quality management is not snapshot programme, but it should be conducted on continuous basis.
- (5) The content of quality management training and education should cover all issues which would contribute to the improvement of quality.

Finally, it is acknowledge that human resources may be regarded as the most valuable asset of any organization, including SMEs. Their competencies need to be developed and, therefore, continuous training and education plays a very important role. Every employee must not only aware to quality, but also must implement it continuously. Organizations must put a well-developed Quality Management training and education strategy and plan in place.

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