
Evaluating training & development effectiveness - A measurement model

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ABSTRACT

Human capital is an important asset for organizations under intense competition. Training and Development function enables human capital to unleash their dexterity. A profound training program acts as a vehicle to enhance employee skills and enable them to perform better in their job. Training and development is very crucial to the employees, the organization and their effectiveness. Human capital is the differentiator between a good company and a great company. The organizations have long understood that their most valuable asset is their human capital and many are convinced for large investments in employee training and development. An effective training program is one that addresses training needs and delivers training according to training objectives. Research in Training and Development function has produced many results. In the last decade, training evaluation has been the main focus for many studies. This literature review based article presents different viewpoints of various authors regarding the significance of training & development, perceptions of employees towards training effectiveness, training evaluation and training effectiveness. It finally endeavours to measure training effectiveness by proposing a new model.

Keywords: Human capital, training effectiveness, training evaluation.

1. Introduction

The world is experiencing technological and informational revolution that makes for variations in nature of business. To meet these variations and beat out the competition in ever changing business scenario, human capital is a major weapon used by organizations. Contemporary management thinking suggests that, human capital can be a competitive advantage to organizations. This competitive advantage can be made sustainable only when human capital is knowledgeable and dextrous. Training and Development function ensures that human capital inculcate required knowledge and abilities. Thus, Training and Development function is considered as significant function in any organization. In India, more importance is given to the conduction of a training program to enhance human assets of firms.

To attract new customers, meet customer expectations, attain customer satisfaction and to retain customers, organizations are striving to be best in their products, service quality and in their customer encounters. This can happen only when organizations have highly skilful employees as their assets. And those employees should be trained on contemporary issues to meet present world ‘techno-customers’ expectations. Thus, significance of training and development function is conspicuous. Being, realized of the fact that training and development function is significant in delivering best quality outcome to customers; Indian

companies started investing in training and development function. However, training alone can't give sustainable competitive advantage for any organization. Results of training have to be measured in order to know its impact on business results, thereby taking measures for further improvements in the training program delivered. Because of huge investments, effort and time involvement in training function, top management also, are interested to know impact of training program on trainees. Hence, training program is evaluated to determine the extent of knowledge, skills and abilities delivered through training and translated into performance. A training program is said to effective, when it delivers what is intended. This paper proposes a model for measuring training effectiveness.

2. Conceptual Framework

2.1 Training

Training is the process of imparting knowledge, skills and abilities to employees. Training is considered as a technical skill enhancement program of employees. Training is defined as a planned learning experience designed to bring about permanent change in an individual's knowledge, attitudes, or skills (Campbell, Dunnette, Lawler, & Weick, 1970).

2.2 Development

As a study conveys development enhances behaviors and improves performance and training is more present-day oriented; its focus is on individuals' current jobs, enhancing those specific skills and abilities to immediately perform their jobs. Employee development, on the other hand, generally focuses on future jobs in the organization.

2.3 Effectiveness

Effectiveness is defined as the capability of producing a desired effect. Effectiveness of training and development can be measured by average time taken to diagnose a problem, success rate of a customer engineer, overall productivity of employees, ROI (Return on Investment), and customer satisfaction.

3. Literature Review

Literature review of this paper has been segregated into five sections as enlisted under:

1. Significance of training and development function
2. Training and development practices
3. Perceptions of employees towards training effectiveness
4. Training evaluation
5. Effectiveness of training function

3.1 Significance of training and development function

Training and development is considered as significant human resource function, as it gains competitive advantage for an organization over its competitors. During 1980s, Japanese management practices clearly indicated that business success based on high standards of performance was dependent on a highly trained and developed workforce. (Brown and Read, 1984). Recent research also indicates a causal link between high commitment practices (including training and development) and improvements in an establishment's performance and competitive advantage. (Patterson et al., 1998; Rajan et al., 1996). Training and

development is most effective motivating and retaining high quality human resources within organization. (Kate Hutchings, Cherrie J.Zhu, Brain K, Cooper, Yiming Zhang and Sijun Shao, 2009). Lowry, Simon, and Kimberley (2002) concluded that training is a factor that enhances employee commitment and maximizes employee potential. The training process is one of the most pervasive methods for enhancing the productivity of individuals and communicating organizational goals to personnel. (Ekaterini Galanou, constantinos-Vasilios priporas, 2009). Organizational training activities are recognized as being able to become sources of competitive advantage (Barney, 1995) through their impact on employees' productivity (Ng & Siu, 2004). As the need for current and future effective managers increases in all types of organizations, training programmes and design tools for the evaluation process become more important (Eseryel et al., 2001; Tennyson, 1999).

Along with other human resource functions', training is increasingly being called on to help companies achieve their strategic objectives (Martocchio & Baldwin, 1997; Noe, 2002; Robinson & Robinson, 1989). Training programs are intended to improve employee workplace performance. (Hall. L. Michael, Nania Sharon, 1997). It is expected that a well-designed and well conducted training program will lead to positive reactions from trainees, learning of the important material, behavior change on the job, and performance improvements. Ostroff Cheri 1991.

Training can be conceived as a change intervention designed to influence learning and behavior change. (Huse, 1975). Manju.S & Dr. Suresh B.H, 2011 says training acts as an intervention to improve quality of products and services of an organization in stiff competition by improvements in technical skills of employees.

3.2 Training and development practices

A research by Yadapadithaya and Jim Stewart (2003), on corporate training and development policies and practices in India (N= 252 Indian companies) and Britain (N=174 Britain companies) provides an overview of training and development function in India and Britain. Study considered international dimensions of training and development such as key responsibility function, corporate commitment to training and development, major drivers and key result areas of T&D; purposes, levels, instruments, timing, and designs of evaluation; major perceived deficiencies and challenges of T&D function. The two country comparisons revealed that while some of the findings related to corporate T&D policies and practices exhibited differences, others also reflected similarity. In more than 71% of Indian organizations, the responsibility of training function lies with HR or training specialist, 55% of staff receive training and an amount of Rs. 253.3 was spent on an employee as training investment; 78.6% of Indian companies provide training with an objective to improve productivity, quality and innovation among employees; 89.3% of organizations conduct training evaluation to determine effectiveness of T&D.

3.3 Perceptions of employees towards training effectiveness

Training should be designed and delivered to meet the needs of all employees, and employees should perceive that they are being treated fairly and equitably with regard to the training they receive. (Schmidt Steven W., 2009).

A research by Kate Hutchings, Cherrie J. Zhu, Brian K. Cooper, Yiming Zhang and Sijun Shao (2009) in China on 310 semi-skilled and skilled workers (technicians) about perceptions of effectiveness of training and development revealed that employee perceived value of

training has differed by age and position. 52.3% of respondents reported that training practices had not provided them with an increase in salary. 36.2% of respondents reported that training had not provided them with an opportunity for promotion. 25.2% of respondents reported that training provided substantial training when they first joined work. However, respondents reported that training and development practices had a positive impact on preparing them to be more effective in their work, increasing their technical abilities, interpersonal abilities, team work, job confidence and work motivation. Perceived effectiveness of training and development varied by age, gender & position and findings suggests that,

Older employees are more likely to feel than younger that,

1. Training had provided them with increase in salary
2. Greater opportunity for promotion
3. Prepared for better job assignments
4. Developed skills to do number of jobs
5. Improved their understanding of business
6. Increased their confidence to undertake task

Older employees are less likely to say that,

1. Training was provided when they first join organization.
2. Motivates them to work in this organization
3. Builds teamwork in organization

Females were less likely to say that,

1. Training had increased their technical abilities
2. Training had prepared them better for future job assignments.

Compared with managers/supervisors, workers are less likely to report that,

1. Training had provided greater opportunities for promotions and increase in salary.
2. Training had increased their technical abilities
3. Improved understanding of business
4. Prepared them better for future assignments
5. Developed skills to do a number of jobs
6. Increased confidence to undertake work tasks
7. Taught them about organization values
8. Training program is better implemented than, in other organizations in which they had been employed.

Schmidt Steven W. (2009) conducted a research on Employee demographics and job training satisfaction in nine U.S and Canadian companies. Research was performed on a 301 customer and technical service executives with an aim to study job training satisfaction. Results of research work concluded that no significant relationship between job training satisfaction and formal education level achieved, age, gender, race/ethnicity; while there is a significant relationship between job training satisfaction and job tenure. Results also say that, customer service representatives started with a fairly high level of job training satisfaction that steadily declined as job tenure increased to the 10-12 year period. Satisfaction then sharply increased for employees with more than 12 years of job tenure. Technical service representatives began

with higher levels of job training satisfaction than customer service representatives, but their job training satisfaction sharply declined during the fourth through sixth year of tenure, sharply increased between the seventh and ninth year of tenure, then sharply decreased again at ten years of job tenure. Temporary employees were significantly more satisfied with the training they received than permanent employees. There were no significant differences in the amount of training received by permanent or temporary employees. Permanent employees received an average of 13 days of training per year and temporary employees an average of almost 16 days of training per year.

From Schmidt Steven W. (2009) research work following observations is made with reference to demographic factors of trainee. Ferdman (1995, 37) defined diversity as composed of 'variations in race, gender, ethnicity, nationality, physical abilities, social class, age and other socially meaningful categorizations. Other demographic dimensions in the context of organization involves educational background, job status, job tenure, geographic location, income, marital status, military experience, parental status, religious belief, and work experience. (Schmidt Steven W., 2009).

3.4 Training evaluation

Training evaluation is often defined as the systematic process of collecting data to determine if training is effective (Goldstein & Ford, 2002; Noe, 2002). According to Brown G. Kenneth & Gerhardt W. Megan (2002), evaluation should include procedures that ensure alignment of a training activity with the organization's strategy. Organizations spend an immense amount of time and money on training in order to facilitate employee's learning of job-related competencies (Casio, 2000; Noe 2006). As a result of the financial investments organizations make in training, it is important to provide evidence that training efforts are being fully realized (Casio, 2000; Dowling & Welch, 2005). According to Leach P. Mark & Liu H. Annie, 2003, to evaluate training investments critically, organizations need to know how reactions, knowledge acquisition, and behaviour change impact outcomes. Similarly, organizations need to know the value of measuring training at multiple stages.

According to Manju.S & Dr. Suresh B.H., 2011, training evaluation has received extensive credit as being advantageous and useful; allows training and development staff to identify areas where particular courses or training programs may be strengthened. Evaluation of the effectiveness of training programs is critical (Goldstein, 1986; Hinrichs, 1976; Kirkpatrick, 1978; Wexley & Latham, 1981). Without documentation of the effectiveness of training, organizations have no good way to know whether training dollars are being spent wisely (Grove & Ostroff, 1991).

Over the years, researchers have developed systematic procedures for training evaluation. Some of them are presented here.

1. Kirkpatrick's four level model
2. Hamblin's five level model
3. Warr's framework of evaluation
4. Virmani and Premila's model of evaluation
5. Peter Bramely's model of evaluation
6. David Reay's approach to evaluation

Among these widely accepted framework is four stage training evaluation model proposed by Kirkpatrick (1959). Kirkpatrick's framework classifies training evaluations into four

categories. 1. Participants' reactions to the training program; 2. Changes in attitude, knowledge or skill levels; 3 changes in work behaviours; 4 changes in organizationally desired outcomes. (Leach P. Mark & Liu H. Annie, 2003).

According to Hamblin training can be evaluated in four levels: Reaction, Learning, Job Behaviour and Functioning. Peter Warr had, for evaluating organization training, recommended the C.I.P.O (Context evaluation, Input evaluation, Process evaluation, Outcome evaluation) framework of evaluation. Virmani and Premila's model of evaluation embraces three stages: Pre-training evaluation, Context and Input evaluation, Post-Training evaluation. Peter Bramely's model of Evaluation includes three stages: evaluation before designing learning event, evaluation during the event, evaluation after the event. David Reay has divided evaluation into three stages: the trial phase, the ongoing phase, the final phase.

3.5 Effectiveness of training function

A training program is said to be effective when training outcome matches with its objectives. The degree with which outcome is closer to objective determines training effectiveness. According to Lina Vyas (2004), evaluation is the most important means to determine the effectiveness of training, however, other factors — including transfer of learning, ability of the trainer to deliver and trainees to absorb, ability of the institute and the trainers to recognize the needs and properly address them, and adequate matching of training package to trainees requirements — also have an influence on the effectiveness of training. According to Huque A.S and Vyas L (2008), training effectiveness may be assessed by considering the results or evaluation, performance of the trainees and their ability to transfer techniques to their jobs. Training effectiveness can also be a function of trainee characteristics, training design and contextual factors (Scaduto Anne, Lindsay Douglas & Chiabur S. Dan, 2008).

Evaluating the effectiveness of training program is an important step as it is carried out to see how well the training objectives have been met and whether it is the best method for achieving those objectives (Niraj Kishore Chimote, 2010). The failure to consistently find results for the effectiveness of training through the use of behavioural and performance rating criteria can be attributed to several sources, including training design issues, trainee characteristics, work environment characteristics, and criterion issues (Baldwin & Ford, 1988; Goldstein, 1986). To examine training effectiveness using results criteria, the inherent difficulties involved in collecting objective performance measures of trainees. (Ostroff Cheri 1991).

4. Model for measuring training effectiveness

The importance assigned to Training and Development function in an organization can be understood by knowing commitment from top managers, investment and time spent on training, major responsibility associated with HR or specialist trainer and involvement of line manager. The purpose of training will be served when employees who undergo training learn skills and knowledge from the training program and apply them in their job. It is difficult to measure training effectiveness; because, training results may not be immediately reflected in trainee performance and contribution of training knowledge in improved performance levels can't be judged objectively. What it makes more difficult in measuring training effectiveness is its complexity in measuring results in terms of monetary value. Yet it is very vital to measure training effectiveness, as it helps in making decisions related to continuation of training, improvements in training and allocation of training resources.

4.1 Four stage cyclic model for measuring training effectiveness

In this paper an attempt is made to develop a comprehensive model for training effectiveness which envisages concepts starting from training needs assessment to trainee performance. The new model is called, 'Four stage cyclic model to measure Training Effectiveness'. (shown in figure 1). This model considers evaluation of four stages of a training program to measure training effectiveness.

Stage1. Training needs

Stage2. Training design

Stage3. Trainer performance

Stage4. Trainee performance

It is proposed that if each of these stages is evaluated for its perfection, training effectiveness can be measured effectively. Inputs from each stage are taken from the previous stage.

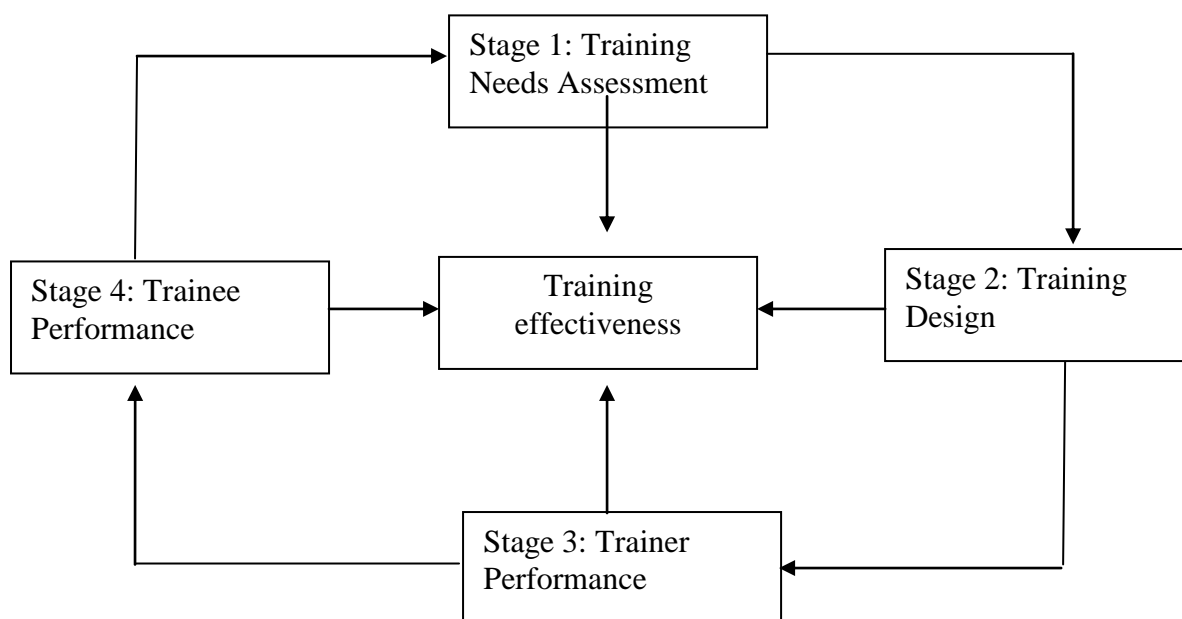


Figure 1: Four stage cyclic model of training effectiveness

Stage1. Trainee needs assessment

Training needs are determined based on gaps in trainees' knowledge, skill, ability, etc. Effectiveness of training depends on relevance of the training package to trainee's genuine needs. If the training programme addresses needs of trainees, he/she attains a high level of satisfaction and grades the training delivered as very effective (Lina Vyas, 2004). By the end of training needs analysis, objectives of training program should be formulated. These objectives in turn should be considered as a benchmark, against which entire training program effectiveness is measured. Hence, training objectives formulated based on training needs analysis is a crucial factor in determining effectiveness of a training program.

In this stage of a training program, evaluation should be made for training objectives. To evaluate effectiveness of training program, training objectives should fulfil following criteria.

1. Training objectives should be measurable.
2. Training objectives should set benchmark
3. Training needs should evolve objectively from trainee requirements.

There are various ways of collecting training needs, such as detailing employee job description, the gap between required skill levels and current skill levels of employees, etc.

Stage 2: Training design

Design is the outline dictating fundamental characteristics of the training. Brown G. Kenneth & Gerhardt W. Megan (2002). Training design refers to the degree to which the training has been designed and delivered in such a way that provides trainees the ability to transfer learning back to the job (Holton, 2000). Training design includes training schedule, material, source of trainer decisions, training methods will be used, training aids required, gaps/breaks during training program. Dubinsky J. Alan (1996) argues that greater the proportion of sales training devoted to product knowledge, the more effective training program. This indicates the importance to training content and the base work required in making a training program effective.

In an empirical study by Manju.S & Dr. Suresh B.H(2011) on 30 industrial units, aimed at ascertaining training design interventions; results showed that the training design interventions have got the due attention of the industrial units and training design and implementation is significantly related to productivity effectiveness of training. There are several training design factors that influence transfer of training. These are Instructional techniques and learning principles (Alvarez, 2004), Self- management and relapse prevention strategies (e.g. Tziner, 1991; Wexley & Nemeroff, 1975) and goal setting (e.g. Gist, 1990). Thus organizations should design their training programmes to include such factors that increase likelihood of transfer Manju.S & Dr. Suresh B.H(2011).

Hence training design is considered as one component of training evaluation of 4 stage cyclic model. Training effectiveness is dependent factor of variables like training material, training aids, methods used. Thus, variables should be evaluated individually.

Stage 3: Trainer performance

Trainer performance has a great impact not only in attracting trainees towards goals of program, but also to the entire effectiveness of training. No matter, whether training goals are formulated to benefit, training aids, methods are good, but if trainer performance is not good, entire training program will eventually turn ineffective.

Stage 4: Trainee performance

Employees, who have gone through training, have to be evaluated to understand change in their learning levels. Training goals (taken from training needs) acts as benchmark against which employee's performance is evaluated and relativity (positive or negative) is analyzed. Observable, well laid down training goals make it easy to measure degree of transfer of learning to employees.

Transfer is the evidence that what was learned is actually being used on the job for which it was intended. Jr. Olsen H. James (1998). The effectiveness of any training program is determined not only by the successful acquisition of critical knowledge but also the ability to

effectively transfer that knowledge to the performance environment (Alkesander P.J. Ellis, Bradford S. Bell, Robert E. Ployhart, John R. Hollenbeck, Daniel R. Ilgen, 2005).

Trainee performance evaluation should be tailor made for an organization. Performance management system outputs can be utilized to know the difference in performance of trainees after training program. If training program is intended to impart technical aspects, after application of these learned skills into a project or regular work by trainee, enhanced results should be considered in determining impact of training on trainee; or to measure trainee performance. If training program is intended to impart behavioural aspects, again after application of these skills into real work, trainee performance is measured. The degree with which these results meet with training objectives, determines training effectiveness.

5. Conclusion

Training and Development contributes in such a way that employees can enhance their dexterity. There is a causal relation between training and employee performance. Training helps organizations in achieving their strategic objectives and gives organizations a competitive edge. In this context, organizations train and develop their employees to the fullest advantage in order to enhance their effectiveness.

It is not just sufficient to conduct a training program. Organizations should evaluate whether training & development programs are effective and producing desired results. Proper evaluation is the base to effective training. Training evaluation should be a regular system by the fact that trainees are transient groups. They attend training program to acquire specific skills and return to work to apply them. Over time, new knowledge and skill becomes necessary; again they return to training program.

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