



## International Journal OF Engineering Sciences & Management Research

### A STUDY ON EVALUATION OF EFFECTIVENESS OF TRAINING PROGRAMME IN INDIAN STEEL INDUSTRY

K. Padmavathi Nageswaramma\*<sup>1</sup> & Dr. R. Padmaja<sup>2</sup>

\*<sup>1</sup>Research Scholar, Krishna University, Machilipatnam, A.P

<sup>2</sup>Assistant Professor, Krishna University, Machilipatnam, A.P

**Keywords:** *Training, Training effectiveness, Training programme, Evaluation of Training, Public Sector Vs Private Sector.*

#### ABSTRACT

Training, like any other organizational aspects, requires commitment of organizational resources in the forms of time, energy, managerial efforts and money. Organizations therefore need to know whether an investment made on training is producing the desired results, i.e., whether training imparted is effective. The class-room learning is more of theoretical in nature. Unless theory is integrated into practice, the learning remains incomplete and static. Generally, training evaluation determines a training programme's effectiveness in meeting its intended purpose, which mainly produces competent employees. Programme evaluation focuses on the results of the training programme and not on the process of training programme. Training programmes invariably inherit expectations in terms of demonstrated benefit to the organization. The purpose of this study is therefore to make an in depth analysis of the training programmes being practiced in Visakhapatnam Steel Plant, vis-à-vis other standard organizations in Steel manufacturing business namely, SAIL, Tata Steel, and JINDAL so as to evaluate and judge their effectiveness

#### INTRODUCTION

Organizations often fail to realize the need to evaluate the training programmes once the session ends. The apparent reason for ignoring this 'evaluation' is lack of time, resources and tools. As organizations are increasingly adopting training programmes, there is a great need to evaluate the same. The process of examining a training programme is called training evaluation. Training evaluation ensures that candidates implement their learning in their respective workplaces, in the regular work routine. Training programme is a transforming process that requires some inputs and in turn produces output in the form of knowledge, skills and attitudes (KSA). Now-a-days, training programme is an investment because the departments such as marketing and sales, human resources, production, finance etc. depends on training for its survival. Training programme provides the opportunity to raise the profile development activities in the organization. The primary responsibility of an organization is to assure that its people perform the assigned jobs safely and effectively. So training personnel must be responsive to the needs of the organization, working hand-in-hand with line managers and supervisors to ensure that training needs are properly analyzed and accordingly those training programmes are developed and implemented in the most efficient and effective way. Generally, evaluation is done at *four* levels: reaction, learning, behavioural change and result in terms of application of learned behavior in the job and resultant benefits to the organization. Training effectiveness is judged from different angles such as knowing how much learning has been acquired by the learners after the training intervention; how much of those learning objectives have been put into practice on their jobs; and with what results for the organizations. Measuring learning just after completion of training and impact of training on the job are important aspects for effectiveness of a training programme. Trainer, learner and beneficiary organization must use their knowledge expertise in stating training objectives clearly, objectively and in line with the specifications of writing a good objective. Designing a training programme involves an investment of creativity, hard work and money. So, training practitioners justify such investment in the belief that training makes a real difference in the workplace contributing to organizational effectiveness that means it is 'Return on Investment (ROI)'. The contribution of a training programme to the organization is arrived at through the process of evaluation. The principles of effective training are intended to assist organizations in establishing and maintaining effective training programmes that produce well-qualified, competent personnel to operate and maintain the organization in a safe and reliable manner. Training evaluation is a critical component of analyzing, designing, developing and implementing an effective training programme. The persons responsible for evaluation of training programmes are the senior management, trainer, line management, the training manager, and the trainee.



## International Journal Of Engineering Sciences & Management Research

### IMPORTANCE OF TRAINING EVALUATION AND ITS EFFECTIVENESS

As organizations need to invest in the development of human capital through training programmes, it is important to develop a tool that will help the organization to improve the training effectiveness. If a training programme is proved to be effective, it will definitely yield the positive results that are desired by the company. The effectiveness of training programme can be maximized by following ten steps as under:

- 1) Training-needs identification
- 2) Pre-training activities
- 3) Planning and organizing the program properly
- 4) Designing the module
- 5) Feedback on the faculty
- 6) Feedback from the external faculty
- 7) Training plan and budgets
- 8) Development of In-house faculty
- 9) Nomination to external seminars and training programs
- 10) Focus on quality training.

### EVALUATION OF EFFECTIVENESS OF TRAINING PROGRAMMES IN PRACTICE IN THE INDIAN STEEL INDUSTRY

#### Public Sector

#### *Training Evaluation and Effectiveness in Visakhapatnam Steel Plant (VSP)*

The assessment of in-house training is carried out for faculty competence and programme content on the basis of a programme evaluation pro forma filled up by the participants at the end of each programme. The feedback information is analyzed by using statistical methods as follows:

- a) Based on the feedback sheet received from the individual participant, if the 'Average general rating of the programme' is less than 3 for a particular programme, then the programme module is relooked and redesigned by the Head of Department, HRD Centre.
- b) Based on the feedback sheet received from the individual participant, if the 'Average rating of the faculty' is less than 3 for a particular programme, then the faculty concerned is communicated for improvement. If average rating of the same faculty for the same topic in the next programme is less than 3, then faculty member is reviewed by the programme in charge /Head of HRD Centre.
- c) The effectiveness of basic engineering skill programmes and multi-skill programmes are evaluated by using 3-tier 'Training Evaluation System' with the help of the following three questionnaires:
  - Training course evaluation pro forma
  - Post training feedback pro forma
  - Effectiveness/implementation on actual work situation pro forma.
- d) Competence evaluation of employees is done by respective department based on questionnaire, interview and observation.
  - Competence of faculty engaged by HRDC is also evaluated.
  - Assessment of training is done by administering questionnaire and competency checklist by line manager through specific formats.

Prior to 2005-06 training effectiveness was measured only at the learning level through pre and post training tests. During 2005-06, for the first time the effectiveness of training at the learning level and application level was carried out in technical areas also. For the first time efforts are also being made to analyze effectiveness of foreign training. All the 15 young engineers who have been sponsored for training at UK and Austria have submitted a report on their visit giving a detail of action plan of the activities that they shall carry out in the



## International Journal OF Engineering Sciences & Management Research

organization. They are also presenting the same before their Heads of the Departments and the Executive Director (works).

VSP provides a conducive climate for the enhancement of knowledge, skills and capabilities of its employees. The VSP training programmes are designed by keeping career progression and employee performance into consideration. VSP also provides training to employees for sister units. VSP briefed about the workings of an integrated steel plant. Facilities are being provided to its employees like township, medical and health care, social amenities and corporate social responsibilities through class room inputs and plant/township visits. Moreover, VSP also provides adequate time to time training programme like a high performing organization. VSP provides a systematic approach to training programme done at all levels on a continuous and ongoing basis. VSP also ensures that there is proper linkage among organizational, operational and individual training needs. VSP is doing well today and looks after the training needs of employee and provides full of training facility which will open the way of great success.

### ***Training Evaluation and Effectiveness in SAIL***

The evaluation of training and its effectiveness is also conducted at SAIL and its different units. These programmes have been selected by taking into consideration the duration, frequency, organization wide programmes and usefulness in imparting critical skills. The programmes are being evaluated for training effectiveness at Reaction level, learning level and Application level while assessment of performance improvement workshops is done at Result level also.

SAIL through MTI conducts training related to management subjects and such training influences thought and behavioral process of the participants. MTI gives due importance to quality of training. To assess relevance and process of training, the training department has Quality Management System (QMS) in place. The audit of quality of training is done every quarter by internal auditors. Annual audits are conducted by external auditors. The Management Review Committee (MRC) meets every quarter to look into deviations and thereby decides about corrective action. By using various parameters, the committee also reviews the trend and variation over a period of each quarter.

### ***Effectiveness of Training at Reaction Level***

For assessing training at reaction levels following three indices are used:

- Customer Satisfaction Index (CSI)
- Support Service Index (SSI)
- Content and Process Rating (CPR) of individual sessions.

After each programme, the reaction level assessment is obtained from the participants. Based on responses, the CSI and SSI are also calculated. Each session of the programme is assessed by the participant for its content and the process adopted by the concerned faculty.

### ***Effectiveness of training at Learning Level***

A lot of importance is given to the second level of assessment that is learning. What do they learn and what learning they apply at workplace is an important piece of information to assess effectiveness of any management training programme. A system of learning sheet has been introduced in every training programme. A well-structured format of learning sheet is distributed to all participants. Participants are requested to record learning points against each session of the programme. They are also expected to list down those proposed applications for which the progress can be monitored by them.

### ***Effectiveness of training at Application Level***

Assessing effectiveness of training at result level is a long process. There are various methodologies and each methodology requires collection of primary data from the workplace of the participants.

### **Private Sector**



## International Journal OF Engineering Sciences & Management Research

### *Training evaluation and effectiveness in Tata Steel*

Safety is a high priority area in Tata Steel. Several movements towards culture of safety have been practiced in the company. The Technical Education Advisory Committee guides employee training in line with strategic goals of the company and its long-term objectives. The in-house training centers impart majority of the training programs. Tata Steel recognizes the importance of continuous enhancement of knowledge, skills and capabilities of its employees and has invested greatly in education, training and development.

At Tata Steel quality programmes are also rolled out in-house by TMTC, XLRI and IIMs for its officers. Development in managerial competencies and leadership elements, especially for the officers is now also being addressed through on-the-job assignment, rotation, working in task forces and committees. At Tata Steel, the employee need identification form is available with the various departments. Then the concerned employee fills in whatever training he feels he needs which is approved by the immediate superior and the department head also gives a list of training needs that he feels is required for the employee. The department HOD then fills a needs identification form. This form indicates the number of employees who will be participating in various training programmes from that department. The department HOD compiles all the individual employee need identification forms and then fills up the group needs identification form. All the HODs send their forms to the training department. The training department compiles all the forms and prepares a final document consisting of the various training programmes and the number of people will attend these programmes from the various departments. The training calendar is thereafter prepared. Then the training programmes are now conducted as per the calendar and recorded into the 'Training Program Particulars' form. This form consists of the list of participants, the venue and the training department co-coordinator etc. of a particular training programme. In some cases when the announced programme could not be conducted, the concerned HOD is informed for onward communication to all the participants. The details are recorded in the 'Training Program Cancellation' record. The training department coordinator is in-charge of the smooth running of the training programme. He has to ensure that all the participants are present for the training; all the instructional material is present and ready for use. After the training programme is over, evaluation of the programme is carried out based on the 'participant feedback' forms received. Corrective action is taken by the training department in case of programmes where feedback rating is very poor. The results are recorded into the 'Program Evaluation' form. The immediate superior of the employees assess training effectiveness within a few days of imparting training for all technical programs. Sometimes, the effectiveness of the training programme is generally assessed by interviewing the employee. During this, the employee is judged on the parameters such as initiative taken by participant, relevance of objectives taught and support from supervisor.

Tata Steel also uses the Kirkpatrick model for measuring training effectiveness, i.e., on the line of Reaction, Learning, Reinforcement and Outcome. The respective HODs do the 'Competency Mapping' for all permanent employees whose work affects quality and performance. Training need is identified from the gaps found. But evaluation of training is of no value if training has not been conducted systematically. At Tata Steel, the aim of training is to provide potential knowledge and skills of trainees to carry out defined tasks and responsibilities and working systematically and efficiently that develop a systematic way of performing duties and assigned tasks. Tata Steel well established Human Resource Division and has invested in the development of a talent pool with number of qualified engineers and a large skilled work force. The company lays special emphasis on integrity and competence and regularly monitoring. After providing the training, the right-skilled employees are placed on the job and feedback on performance is taken from the internal sources. Based on the requirements specified by internal employees (i.e., the Departmental Chiefs & Heads) and the existing skill gaps, a new approach of 'man to position mapping' has been introduced. For each position, the skill requirement has been analyzed and a specific training programme is provided for development.

The qualified talent in the non-officer category sought further growth opportunities in line with the industry growth. Tata Steel also decided to create a new Officer's level (IL-6) to which its employees could progress. This new level handles transactional jobs where the majority of the responsibility is routine in nature and this can be performed by Diploma holders who have some experience in the organization.

### *Training Evaluation and Effectiveness in JINDAL*

At JINDAL, the Human Resource Department is also ensuring to get the feedback form from the employee after his completion of the course. A half-day session for the employee by a few managers to transfer the learning should be organized by the Human Resource Department after the days of the return from training programme. The employee shall submit the course material to the Human Resource Department for the purpose of



## International Journal OF Engineering Sciences & Management Research

maintaining the library and is so required to retain a copy of the same. Then the evaluation/feedback from the trainee indicates appropriate changes that have to be made in the programme and contents design which will improve the effectiveness of the programme. The feedback also consists of an action plan by the concerned employee with a specific time frame to implement the learning to the actual performance. The feedback forms are available with the Human Resource Departments. It is the responsibility of the Head of the Department and the Human Resource Department to work together to assess the effectiveness of the training attended by the employee. This will also help in updating the training records of the individuals and in conducting an analysis of various training programmes.

### METHODOLOGY

#### Literature Review

Garrett J. Endres and Brian H. Kleiner (2000)<sup>1</sup> in their research study 'How to Measure Management Training and Development Effectiveness' have observed that successfully measuring effectiveness in management training and development can be a difficult task. So they designed a valid measurement programme that includes evaluation in key areas such as emotional reaction and knowledge gained after training interventions.

In order to know the gap between training and work practices, it is necessary to evaluate training programmes. Current scenario concerning evaluation of training through sophisticated research design is not very encouraging in the Indian context. In this context Sayeed (2002)<sup>2</sup> in his study, 'Factors Affecting Training Effectiveness: Meta-Analysis and Revision of Learning Effort Model', pointed out that Indian organizations have mostly restricted themselves to the reaction of trainees towards various features of the programme. So he concluded that there is a need to bridge the gap between training and work practices.

Elangovan and Leonard Karakowsky (2005)<sup>3</sup> have undertaken a study titled 'the role of trainee and environmental factors in transfer of training: an exploratory framework'. They observed that organizations have focused attention on the effectiveness of the transfer of training to the job-site.

Kaye Alvarez, Eduardo Salas and Christina M. Garofano (2007)<sup>4</sup>, in their work titled 'An Integrated Model of Training Evaluation and Effectiveness', have pointed out that evaluation measures found to be related to post training attitudes are cognitive learning, training performance, and transfer performance. They concluded that training effectiveness variables are pre training self-efficacy, experience, post training mastery orientation, learning principles, post-training interventions, and post training attitudes.

Bergenhengouwen (2010)<sup>5</sup> in his research, 'The management and effectiveness of corporate training programmes', has concluded that the education manager sees corporate training programmes from the overall policy of the organization. In dialogue between the corporate management and the education manager, a training policy is developed so as to ensure effectiveness of the training programmes. As a consequence, there is an increasing trend for the practical and corporate benefits of training to be evaluated in the light of the organization's policy. Evaluation of the effects of training programmes should therefore lay more emphasis on the assessment of their practical results and applications in the work situation.

James S. Russell, James R. Terborg and Mary L. Powers (2012)<sup>6</sup>, in their study titled 'Organizational Performance and Organizational level Training and Support' have pointed out that the relations among retail sales training, organizational support, and store performance and to examine whether training interacts with organizational support to predict store performance. The study is unique in that it presents an example of the analysis of the relationship between organizational level measures of training and performance, as opposed to more traditional individual level measures. Archival data in a co-relational design were analyzed for 62 stores belonging to the same international merchandising firm. Two measures of training and two measures of support were used to predict two measures of store performance. Results indicated that training and organizational support were significantly correlated with both measures of store performance, although the relationship between training and organizational performance was stronger. In contrast to predictions, there were no significant interactions between the training and support variables.

John E. Mathieu (2014)<sup>7</sup> in his study, 'individual and situational influences on the development of self-efficacy: Implications for training effectiveness', has proposed a model that included individual and situational antecedents of self-efficacy development during training. Initial performance and self-efficacy levels, achievement motivation and choice were examined as individual variables. Constraints, operationalized at both

## International Journal OF Engineering Sciences & Management Research

the individual and aggregate levels of analysis were examined as situational influences. The study concluded that there are positive linear relationships with training reactions and subsequent performance and an interactive relationship with performance when training reactions were considered as moderator.

In the study 'Human Resource Development and Organizational Values', Arif Hassan (2015)<sup>8</sup> has examined the relationship between HRD practices and organizational values. He has established that HRD practices like training and development were positively related to organizational values of collaboration, creativity, quality, delegation and human treatment.

### Objectives

This piece of work has been carried out with the following objectives:

- To study about the training evaluation and effectiveness practices in major steel industrial units namely, VSP, SAIL, Tata Steel and JINDAL.
- To analyse the views of management respondents regarding the evaluation of training programme implemented at VSP.

### Data Collection

The data were collected by using the following methods:

- The primary data were collected through questionnaires.
- The Secondary data were collected from records, circulars, leaflets, magazines and journal of Visakha Steel Plant.

The questionnaire consisting of 12 statements were distributed among the respondents at random and collected back upon being filled up by the respondents. Secondary data collected from magazines, annual reports of different years, leaflets, journals etc. of major steel industrial units namely, VSP, SAIL, Tata Steel and the JINDAL.

### Tools and Techniques Used

The important statistical tools and techniques used in the study: two way ANOVA and F-test.

### Sample Size

The sample consists of 60 respondents from different hierarchy levels in different department of VSP. Proper attention has been paid in selection of the sample.

### DATE ANALYSIS

In order to study the interrelationship among three variables i.e., training provided, employees' attitude towards training programmes, and organizational performance that a null hypothesis was formulated as 'there is no significant difference between training provided, employees' attitudes towards training programmes, and the organizational performance'. Validity of the said hypothesis has been tested through a two-way ANOVA and F-test the result of which has been presented in Table 1.

*Table-1: Interrelationship between Training Provided, Employees' Attitude towards Training Programmes, and Organizational Performance*

Performance*	Training provided**	Attitude***	ANOVA	Result
-1	8.5	3.8	F = 0.057 (calculated) tabulated value=3.3852	Not significant
-0.5	9.3	3.7		
-0.1	8.5	1.8		
1	8.6	4.2		
0.4	9.7	3.6		
1.3	8.8	3.5		
1.4	9.0	1.8		
1.0	9.1	1.7		

## International Journal OF Engineering Sciences & Management Research

1.3	9.0	4.1		
0.8	10.5	3.9		
	12.4	3.9		
	12.2	2.0		

**Notes:** \*Performance= Profit/1,000; \*\* Training provided = Number of employees receiving training/1,000; \*\*\* Attitude= Employees' perception towards training programmes/100. The figures have been divided in order to reduce their size without diluting their ultimate values.

It is apparent from Table 1 that the calculated value of F is 0.057 against its tabulated value of 3.3852. The calculated value being less than the table value leads to acceptance of the hypothesis. It is therefore concluded that the training provided, employees' attitudes towards training programmes, and organizational performance are on the same line. It further implies that the training programmes of VSP have been accepted by the employees which also have got transformed into its enhanced performance.

### FINDINGS

Considering the above mentioned objectives, following results have been observed:

#### Comparison of training evaluation and effectiveness in practice

VSP is engaged in a better way in the process of developing a workforce, which continuously strives for excellence in all spheres of competence-knowledge, skills and attitudes leading towards the achievement of goals. Whereas its parent organization, SAIL has witnessed a steady rise in production, productivity and profitability.

Tata Steel recognizes the importance of continuous enhancement of knowledge, skills and capabilities of its employees whereas the basic objective of imparting training to the employees in JINDAL is 'improving performance of the company through people'.

When compared organization wise, the views of different levels of employees in different organizations differ in their views on effectiveness of training evaluation practices. A quick comparison of training evaluation and measurement at VSP, SAIL, Tata Steel, and JINDAL has been given in Table 2 which makes an effort to analyze the views of management respondents regarding the effectiveness.

**Table-2: Training evaluation and effectiveness at VSP, SAIL, Tata Steel, and JINDAL: A Comparison**

Parameters	VSP	SAIL	Tata Steel	JINDAL
Measuring training effectiveness	Y	Y	Y	Y
Systematic training valuation	Y	Y	Y	Y
Four levels of evaluation	Y	Y	Y	Y
Productivity	Y	Y	Y	Y
Unit efficiency	Y	Y	Y	Y
Adequacy of talent reservoir	Y	Y	Y	Y

**Note:** SAIL - Steel Authority of India Limited, VSP- Visakha Steel Plant, Y - Yes

Source: Compiled by author.

#### Views of management respondents towards training evaluation and effectiveness

Training activities of an organization is measured by number of training programmes conducted per year or number of training programmes per employee which does reflect quality of the training programme. In addition to the quantity, quality needs to be taken as a measure of evaluating training activities of the organization. Theoretically, there should be proper matching between the training output and expectations from the training which yields benefits to the organization. When there is a wide gap between the two, effectiveness of the training programme decreases. This gap is mainly because in many organizations training is imparted routinely and for the fulfillment of the good figures to come out without proper assessment of its impact on the

## International Journal OF Engineering Sciences & Management Research

organization. It is common that for the execution of a function nicely attached more significance than evaluating the positive impact of the training programme. At VSP training is considered as an effective tool to assist the organization for the achievement of the desired objectives. Effective training programme refers to the process that occurs before, during, and after the programme. The value of training programmes not only come from individual learning but also from employee interaction and knowledge sharing. Communication of ideas improve manufacturing, service and interdepartmental processes. Effective training programme focuses on both the design and the attitudes of the trainers in the organizational context.

### SUGGESTION

Planned training programme will return values to the organization in terms of increased productivity, greater organizational stability and flexibility to adapt to changing external requirements. So, training programme must be systematic and organized on the basis of organizational and individual levels that means training is an organized procedure for increasing the knowledge and skill of people for a definite purpose. In order to make the training programme more effective in improving organizational as well as individual performance, it is important that perception regarding effectiveness of training be made positive which can be done by employees involvement in training and development related activities, by creating good learning environment, by providing encouragement in terms of promotion or increment and by linking training more closely to work practices.

### CONCLUSION

Organizations like VSP, SAIL, Tata Steel, and JINDAL are reconsidering their investments in training programmes as they recognize that knowledge, skill and attitude of employees give an advantage to face competitors and to meet changes in environment. Based on the information gathered from evaluating training programmes that they can make important decisions on modifying the training programmes by reducing the shortcomings and to come out with a better approach. The above companies can use appropriate employee surveys and propose models based on the ideas from Kirkpatrick's four levels for developing the employees to work in this challenging and highly competitive environment. Organizations like SAIL and VSP have marked considerable expense for the training programmes whether provided by in-house or off-the-job. They use training to facilitate the learning skill to retain employees, improve their culture and to create reward system for their good performance. Although, the process of training evaluation in other competitive firms like the Tata Steel and JINDAL are broader when compared to that of SAIL or VSP, training evaluation done in VSP also indicates its remarkable impression. The evaluation of training programme and measurement of effectiveness at VSP is in line with other competing organizations namely Tata Steel and JINDAL.

### REFERENCES

1. Endres Garrett, J., and Kleiner Brian, H. (2000). *How to Measure Management Training and Development Effectiveness*. *Journal of European Industrial Training*, 14(9).
2. Sayeed, O. B. (2002). *Factors Affecting Training Effectiveness: Meta-Analysis and Revision of Learning Effort Model*. *Indian Journal of Industrial Relations*, 34(2):193-211.
3. Elangovan, R. A. and Karakowsky Leonard. (2005). *the Role of Trainee and Environmental Factors in Transfer of Training: An Exploratory Framework*. *Leadership & Organization Development Journal*, 20(5):268-276.
4. Alvarez Kaye, Salas Eduardo, and Garofano Christina, M. (2007). *An Integrated Model of Training Evaluation and Effectiveness*. *Human Resource Development Review*, 2004, 3(4):385-416.
5. Bergenhenegouwen, G. (2010). *The Management and Effectiveness of Corporate Training Programmes*. *British Journal of Educational Technology*, 21(3):196-202.
6. Russell James, S., Terborg James, R., and Powers Mary, L. (2012). *Organizational Performance and Organizational Level Training and Support*. *Personnel Psychology*, 38(4):849-863.
7. Mathieu, J. E. (2014). *Individual and Situational Influences on the Development of Self-efficacy: Implications for Training Effectiveness*. *Personnel Psychology*, 46(1):125-147.
8. Hassan, A. (2015). *Human Resource Development and Organizational Values*. *Journal of European Industrial Training*. 31(6):435-448.