



## Training Evaluation Programme-Key for Organisational Success

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**ABSTRACT:** Training is a never ending activity concerned with developing potential of employees in order to get maximum satisfaction and give best efforts to the organisation. The outcome of a successful training is the quality improvement in the area of efficiency and effectiveness at work. Training also contributes in shaping appropriate behaviours and attitude towards work as well as people in an organisation development. Through training an organisation go "Green" to reduce waste to leave the greatest footprint on their employees. With increased competition, organisation constantly focuses on improving their employees that results in the overall development of the organisation performance. Generally training program build up "learning organisation" to transfer the learning to all human resources for greater organisational effectiveness. So an organisation continuously emphasize on improving the skill of people by providing well design training programs. Moreover, every organisation should respects human rights, value its employees, invest in new innovative technology and provide appropriate training program along with evaluating the effectiveness of training program by means of measuring Return On Investment (ROI) of training that leads to success. The purpose of this study is to make an in depth analysis of the evaluation of the effectiveness of training programmes being practice in Rourkela Steel Plant.

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### I. INTRODUCTION

Generally, organisations must understand how to evaluate return on investment and ensure that whatever choices made have added value to the organisation rather than consuming resources. A pre-training is very important in demonstrating that the 'after' is better than the 'before'.

Training activities of any organisation are mainly measured by number of training programs conducted per year or number of training programs per employee per annum that reflect the quality of the training programs. Both quality and quantity should be taken as a measure of evaluating training activities of any organisation. Theoretically, there should be matching between the training output and expectations from the training. But various studies show there is a difference between these two. Effectiveness of the training decreases, if the gap widens. So organisation should properly execute a function than evaluating positive impact of the training program. Organisations should realise the need to evaluate the training development programs after the training session ends.

Within work settings, evaluation of training can assist in learning about the organisation. Before planning and choosing training method, it is important to understand the purpose of evaluation. When evaluation done correctly, they can impact organisations in positive ways. Evaluation process assists in improving efficiency and effectiveness of employee performance, training contents and methods and organisational productivity who is responsible for the evaluation process and what resources of time, people and money are available for evaluation process, these two principal factors need to be resolved through evaluation of training programs. Generally the senior management, the trainer, line management, the training manager and trainee are responsible for evaluation of training.

### Training Evaluation Process

The process of evaluation comprises prime informing the participants about the objectives of the training development program. Training evaluation process mainly comprises before training, during training and after training which can be summarize as follows:

**Before training** – Before the training program, the learner’s skills and knowledge are assessed. Candidates are unaware of the objectives and learning outcomes of the program. So, they perceive it as a waste of resources during the start of the training. Once aware, they are asked to give their opinion about the methods used, whether these method appropriate or not, preferences and learning style.

**During training-** During training program, instruction is started and usually consists of various short tests at regular intervals.

**After training-** After training, again learner’s skills and knowledge are assessed to measure the effectiveness of the training. In this phase also determine whether training had the desired effect on individual department and at different organisational level.

Evaluating the effectiveness of training is an important step in establishing the continuous development and provides opportunities to decide whether the training has been a success or more advanced form of training is required.

Training evaluation process on the basis of time period as per the role represents the actual transformation of training program that can be summarized as follow:

<b>Time/Role</b>	<b>Before Training</b>	<b>During Training</b>	<b>After Training</b>
<b>Role of Manager</b>	<ul style="list-style-type: none"> <li>➤ Design transfer of training into supervisory standards. So for this, both superiors and trainees involve in need analysis process.</li> <li>➤ Involvement of trainees in planning training program along with layout the importance of training.</li> <li>➤ Prepare to participate in training sessions simultaneously motivating for attendance at all sessions.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Convert plan into work assignment</li> <li>➤ Focus on attendance</li> <li>➤ Planning to transfer new skills to the job and recognise trainee participation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Provide opportunities how to use new job aids and to provide new skills.</li> <li>➤ With positive reinforcement schedule trainee briefing for co-workers.</li> <li>➤ Determine whether trainees participate in transfer related decisions.</li> </ul>
<b>Role of Trainer</b>	<ul style="list-style-type: none"> <li>➤ Systematic design of instruction and various components for the program with its follow up activities.</li> <li>➤ Assessment of the training plan with the organisation strategic plan.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Determine application –oriented objectives and manage training proves.</li> <li>➤ With feedback mechanisms , be realistic about work related tasks and provide job performance.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Provide problem solving sessions with feedback mechanism.</li> <li>➤ Conduct evaluation survey with follow up support .</li> </ul>
<b>Role of Trainees</b>	<ul style="list-style-type: none"> <li>➤ Involve in advance activities.</li> <li>➤ Explore various training options actively and provide input for program planning.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Establish behavioural contacts.</li> <li>➤ Maintain application notebook with actively participate.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Overview on training content and learned skills.</li> <li>➤ Practice self-management and maintain contact with training related personnel’s.</li> </ul>

Generally, it is observed that most of the trainers are basing their evaluation on the four-level model developed by Kirkpatrick(1994).The four levels proposed in his model are as follows:

**Reaction:** Evaluate reactions of trainees towards the training program.

**Learning:** Measuring learning through series of question such as what knowledge was learned?; What skills were enhanced?; What attitudes were rectified ?.

**Behaviour Application:** Ask the trainee’s behaviour on the job changed.

**Result:** By checking the frequency of new skills/knowledge /attitudes on the job as well as their effectiveness as applied on the job. Results indicates the extent to which training program has influenced on

Moreover we are going to discuss about another one of the most popular training evaluation method i.e. Kearns’ Baseline Evaluation Model. In this model, the participants are well informed regarding the context of the program, the training methods in advance simultaneously they are continuously encouraged to write their own views throughout the program so that they can easily write those points when required to fill in their feedback questionnaires. After the completion of the program, the participants have another opportunity to re-evaluate the impact of the training received on their performance. To quantify the results of training and development programs is difficult but many training ROI assessments are the ‘best estimates’ to add more value

to gain the 'best estimates' than to have no assessment at all. We can say lot of money, time and other resources are invested in the training programs. Therefore, it is mandatory for an organisation to investigate the effectiveness of the training program. Kearns' Baseline evaluation model mainly focuses on two variables simultaneously i.e., individual performance and organisational value.

Besides these, it also offers

- A systematic methodology
- Aid the actual learning process.
- Continuous improvement cycle which can be totally integrated with other business improvement schemes based on total quality.

On the basis of four variables such as output, cost, quality and revenue, this model mainly focuses on how training will help the trainee to perform better and how training will add value. Kearns uses the simple formula of ROI to assess the benefits of training development program:

$$\text{Net ROI} = \frac{\text{Gross benefit from training} - \text{cost of training}}{\text{Cost of training}} * 100$$

As per this model a 'Pre training' baseline is very important in demonstrating that the 'after' is better than the 'before' as such:

**Pre-Training:** Determine how the proposed training is going to add value to the organisation along with measures performance for each trainee before the training starts.

**Post-training:** Check reactions-learning-transfer-remeasure the performance of each trainee and then calculate ROI.

## II. LITERATURE REVIEW

Garrett J. Endres and Brian H. Kleiner (1990) in their research study 'How to Measure Management Training and Development Effectiveness' have found 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.

Judith B. Strother (2002) in the work 'An Assessment of the Effectiveness of e-learning in Corporate Training Programs' has pointed out that the corporate managers are constantly looking for more cost-effective ways to deliver training to their employees.

E-learning is less expensive than traditional classroom instruction. In addition, many expenses such as booking the training facilities, meeting the travel costs for employees or trainers, along with employee's time away from the job can be greatly reduced.

Kaye Alvarez, Eduardo Salas and Christina M. Garofano (2004), in their work titled 'An Integrated Model of Training Evaluation and Effectiveness', have observed 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.

R.A. Noe (1986) in his research 'Trainees Attributes and Attitudes: Neglected Influence On Training Effectiveness' has developed a model of training effectiveness in which he observed that rewards resulting from successful completion of training influences individual's motivation to attend training and to learn from it. According to him, success of training programmes depends on their perceived effects on career goals. So employees can also be motivated if they can be involved in the training activities. Training is one of the ways to involve people so that they can put more efforts to learn and then transfer the learning into action.

### Need of the study

The present study is designed to assess evaluating the effectiveness of training programme that can be important practices of an organisation. The scope of the study being confirmed to manufacturing industries only, its findings may not hold good to other manufacturing and/or other service industries in India and abroad.

### Objectives

- To study the existing training evaluation programme in practice in Rourkela Steel Plant (RSP).
- To measure the attitude of the respondents on the basis of demographic variable towards the effectiveness of training evaluation programme.

### III. METHODOLOGY

#### Data source and Method of collection

In this present study, a self developed questionnaire in the form of statements used as the tool for primary data collection. And from leaflets, magazines and journal in relate to this, secondary data were collected.

#### Sample Size and Sampling

For the purpose of this study, the samples are selected from different strata of employees on random basis. The sample consists of 200 respondents from different hierarchy levels in different department of RSP. Proper attention has been paid in selection of the sample.

#### Tools and Techniques used

The important statistical tools and techniques used in the study: Chi-square test.

### IV. RESULTS AND DISCUSSION

The purpose of this study is to find out the effectiveness of training evaluation programme in an organisation. So in this context, initial experience can be compared with their post experience by taking 200 employees. There is also possibility that the demographics characteristics like age, gender, experience and education may also affect their views on the evaluation of training programme. Such variables included in the study to examined their impact on the perception towards work culture. For this purpose, response is taken from a sample of 200 employees.

The tabulated description of demographic details of the sample is presented in the Table-1.

**Table-1: Frequency Distribution of Sample demographics**

Frequency Distribution of Sample demographics			
Sl. No.	Variable	Number	Frequency (%)
01.	<b>Gender</b>		
	Male	160	80
	Female	40	20
02.	<b>Age</b>		
	Less than 30	30	15
	31 to 40	65	32.5
	41 to 50	80	40
	Above 50	25	12.5
03.	<b>Experience</b>		
	Less than 10 yrs	20	10
	10-20 yrs	110	55
	Above 20 yrs	70	35
04.	<b>Education</b>		
	Under Graduate	55	27.5
	Graduate	100	50
	Post Graduate	45	22.5

#### Chi-Square Test of Independence (Gender and Training evaluation)

##### Hypothesis

H0: Training evaluation and gender are independent (Null Hypothesis)

H1: Training evaluation and gender are dependent (Alternate Hypothesis)

Level of significance=1%

**Table- 2: Contingency table for Gender \*efficacy Gap Cross-tabulation**

Contingency table for Gender *efficacy Gap Cross-tabulation				
		Gap	No Gap	Total
<b>Gender</b>	Male Count	20	140	160
	Expected Count	22.4	137.6	
Female Count	Female Count	08	32	40
	Expected Count	5.6	34.4	
<b>Total</b>		28	172	200

**Table- 3: Results of Chi-square analysis for gender and efficacy gap combination**

	Value	df
Chi-Square	1.493	01
N	200	

The value of chi-square statistic obtained from the chi-square distribution table is 6.635 and the calculated chi-square statistic sample value is 1.493. Thus, the null hypothesis is accepted because the table value is more than calculated value & hence it can be concluded that Training evaluation and gender are independent on the basis of statistical evidence at 1% level of significant. In this study, the gender has no influence on the level of training evaluation. In other words, gender is not a determining factor on training evaluation. This implies that both female and male employees are as per in behaving emotionally mature in the premises.

**Chi-Square Test of Independence (Age and Training evaluation)**

**Hypothesis**

H0: Training evaluation and age are independent (Null Hypothesis)

H1: Training evaluation and age are dependent (Alternate Hypothesis)

Level of significance=1%

**Table-4: Contingency table for Age\*efficacy Gap Cross-tabulation on training evaluation**

Contingency table for Age*efficacy Gap Cross-tabulation				
		Gap	No Gap	Total
Age	Less than 30 Count	05	25	30
	Expected Count	5.25	324.75	
31 to 40 Count	Count	15	50	65
	Expected Count	11.37	53.62	
41 to 50 Count	Count	10	70	80
	Expected Count	14	66	
Above 25 Count	Count	05	20	25
	Expected Count	4.37	20.62	
<b>Total</b>		35	165	200

**Table-5: Results of Chi-square analysis for age and efficacy gap combination**

	Value	df
Chi-Square	5.8461	03
N	200	

The value of chi-square statistic obtained from the chi-square distribution table is 11.3 and the calculated chi-square statistic sample value is 5.8461. Thus, the null hypothesis is accepted because the table value is greater than calculated value. The null hypothesis needs to be chosen in this case. Hence it can be concluded that training evaluation and age are independent on the basis of statistical evidence at 1% level of significant. This implies that as age of the employee increases the individual's perceptions level towards training evaluation increases proportionately. So, in this study senior employees are more mature than junior employees. As a result the senior employees are capable enough to guide their juniors in their respective work area.

**Chi-Square Test of Independence (Experience and Training evaluation)**

**Hypothesis**

H0: Training evaluation and experience are independent (Null Hypothesis)

H1: Training evaluation and experience are dependent (Alternate Hypothesis)

Level of significance=1%

**Table-6: Contingency table for Experience\*efficacy Gap Cross-tabulation**

Contingency table for Experience*efficacy Gap Cross-tabulation			
	Gap	No Gap	Total
Experience less than 10 years Count	05	15	20
Expected Count	05	15	
10-20 years Count	30	80	110
Expected Count	27.5	82.5	
Above 20 years Count	15	55	70
Expected Count	17.5	52.5	
<b>Total</b>	50	150	200

**Table- 7: Results of Chi-square analysis for experience and efficacy gap combination**

	Value	df
Chi-Square	1.671	02
N	200	

The value of chi-square statistic obtained from the chi-square distribution table is 9.21 and the calculated chi-square statistic sample value is 1.671. Thus, the null hypothesis is accepted because the table value is greater than calculated value & hence it can be concluded that training evaluation and experience are independent on the basis of statistical evidence at 1% level of significant.

In this study, the level of experience has influence on the effectiveness of training programme. In other words, experience is a determining factor on training evaluation programme. This implies that more experienced employees mature than less experience that influences their work style & professionalism.

**Chi-Square Test of Independence (Education and Training evaluation)**

**Hypothesis**

H0: Training evaluation and education are independent (Null Hypothesis)

H1: Training evaluation and education are dependent (Alternate Hypothesis)

Level of significance=1%

**Table-8: Contingency table for Education\*efficacy Gap Cross-tabulation**

Contingency table for Education*efficacy Gap Cross-tabulation			
	Gap	No Gap	Total
Experience Under Graduate Count	05	50	55
Expected Count	11	44	
Graduate Count	20	80	100
Expected Count	20	80	
Post-graduate Count	15	30	45
Expected Count	09	36	
<b>Total</b>	40	160	200

**Table- 9: Results of Chi-square analysis for education and efficacy gap combination**

	Value	df
Chi-Square	9.09	02
N	200	

The value of chi-square statistic obtained from the chi-square distribution table is 9.21 and the calculated chi-square statistic sample value is 9.09.

Thus, the null hypothesis is accepted because the table value is greater than calculated value & hence it can be concluded that training evaluation and education are independent on the basis of statistical evidence at 1% level of significant.

In this study, the level of education in terms of Undergraduate and Postgraduate has influence on the level of effectiveness of training evaluation programme. In other words, Education level is a determining factor on effectiveness of training evaluation programme towards employee perception. This implies that Post graduate employees are more knowledgeable than under graduate employees that influences their career.

The objective of the study was to examine how demographic characteristics like gender, age, experience and education of the employees towards effectiveness of training evaluation programmes that can influence organisational effectiveness.

**Table- 10: Results of Chi-square Analysis**

Sl. No.	Demographic variables	Chi-square statistic
1.	Gender	1.493<6.63 (Insignificant)
2.	Age	5.8461<11.3 (Insignificant)
3.	Experience	1.671<9.21 (Insignificant)
4.	Education	9.09 <9.21 (Insignificant)

The values of chi-square statistics obtained from the chi-square table for all three combinations are:6.63,9.21 and 11.3 and the calculated chi-square statistic values are 1.493,5.8461,9.09 and 1.671.Thus , it can be concluded that efficacy gap and age, gender as well as experience are independent on the basis of statistical evidence at 0.05 level of significance.

## V. RECOMMENDATIONS

- Enhancing training facilities to meet the future requirements.
- Measure competence mapping for all employees.
- Evaluating training effectiveness at different levels for both technical and managerial programmes.
- Continual improvement in infrastructure and facilities in all aspects of training.
- Organisations training should be regularly audited.
- Periodical review ensures SMART based training activity (Specific, Measurable, Achievable, Realistic and Time).
- Human Resource Development Centre should be well equipped with training materials and aids.
- Policy and guidelines of training should be written in such a manner that facilitates future training programmes.

## VI. CONCLUSION

Training evaluation is the process of examining a training program which checks whether training has had the desired effect. We can say through training evaluation, candidates implement their learning in their respective work routines in the workplace .It is a transforming process mainly requires some input which in turn produces output in the form of knowledge, skills and attitudes.

Training is an investment because various departments depend on training for its survival because training provides the opportunity to raise the profile development activities in the organisation.

The philosophy of training function in Rourkela Steel Plant has been able to respond to the training policy, with a professional activity based approach.

Trainers can also find out the success rate of the training program by observing the individual while performing the job, comparing trainee's job execution style, before and after the training period and reviewing the business results before and after the training programme.

The first two levels , Reaction and learning are more inclined towards understanding the trainee's perception towards training and what has been taught during the training. The last two levels, transfer and results contribute towards development at the organisational level.

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