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A Practical Investigation on Training Need Analysis of the Employees in Probationary Period in Information Technology Sector

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ABSTRACT

This investigation describes the results of a qualitative study, which investigates the training needs of employees on their probationary period. Training Needs Analysis (TNA) is a review of learning and development needs of the employees within an organization. It considers the skills, knowledge and behaviour that people need, to develop themselves effectively. The main aim of this investigation is to identify the factors that contribute to Training Need Analysis. After identifying the factors, significance of association was tested by chi square. Structural Equation Model was framed to identify the model fitness of Training Need Analysis. The outcome of Training Need Analysis should be a robust training and development plan, linked to organisational, team and individual objectives.

Keywords: Training Need Analysis, Competencies, Knowledge Sharing and Structural Equation Model.

1. INTRODUCTION

Training has the distinct role in the achievement of an organizational goal by incorporating the interests of organization and the workforce (Stone R.J. Human Resource Management, 2002)^[1]. Now a days training is the most important factor in the business world because training increases the efficiency and the effectiveness of both employees and the organization. The employee performance depends on various factors. But the most important factor of employee performance is training. Training is important to enhance the capabilities of employees. The employees who have more on the job experience have better performance because there is an increase in the both skills & competencies because of more on the job experience Fakhar Ul Afaq, Anwar Khan^[2]. Training also has impact on the return on investment (Richard Chang Associates, INC.)^[3]. The organizational performance depends on the employee performance because human resource capital

of organization plays an important role in the growth and the organizational performance. So to improve the organizational performance and the employee performance, training is given to the employee of the organization. Thus the purpose of this study is to show the impact of training and the design of training on the employee performance.

Training & development increase the employee performance like the researcher said in his research that training & development is an important activity to increase the performance of health sector organization (Iftikhar Ahmad and Siraj-ud-din, 2009)^[4]. Another researcher said that employee performance is the important factor and the building block which increases the performance of overall organization (Qaiser Abbas and Sara Yaqoob)^[4]. Employee performance depends on many factors like job satisfaction, knowledge and management but there is relationship between training and performance (Chris Amisano, 2010)^[5]. This shows that employee performance is important for the performance of the organization and the training & development is beneficial for the employee to improve its performance. Thus the purpose of this study is to show the impact training & development on the employee performance.

Meaning of training need analysis: The process of identifying training needs in an organization for the purpose of improving employee job performance.

Meaning of Needs: A need is defined as a discrepancy or gap between the way things are and the way things ought to be (Van Dyk et. al., 2001:179)^[6]. Needs refers to the things that people must possess. They are often contrasted with wants, which are more discretionary. In this study, the term need refers to the gap that exists between the skills employees possess as compared with the skills that they are supposed to have acquired as per the requirement of the post. Needs are classified as Normative needs, Organizational needs, Felt needs and Comparative needs.

A needs analysis is defined by Van Dyk et. al., (2001)^[6] as the detailed investigation of an apparent performance problem in order to establish real causes or needs of the situation and to establish which of these may be addressed by training.

Meyer (2000)^[7] defines needs analysis as the act and process of separating any material or abstract entity into its constituent elements, which involves determining its essential features and their relations to one another. The terms analysis and assessment are used interchangeably in the context of determining training needs.

Types of Needs Analyses: Many need assessments methods are available for use in different employment contexts. Sources that can help us determine which needs analysis is appropriate for the situation are listed below:

- (a) **Organizational Analysis:** An analysis of the business needs or other reasons for which the training is required. It is the analysis of the organization's strategies, goals, and objectives. What is the overall organization trying to accomplish? The important questions being answered by this analysis are who decided that training should be conducted, why a training program is seen as the recommended solution to a business problem, what has been the history of the organization with regard to employee training and other management interventions.

- (b) **Person Analysis:** Analysis dealing with potential participants and instructors involved in the process. The important questions being answered by this analysis are who will receive the training and their level of existing knowledge on the subject, what their learning style is, and who will conduct the training. Do the employees have required skills? Are there changes to policies, procedures, software, or equipment that require or necessitate training?
- (c) **Work analysis/Task Analysis:** It is the analysis of the tasks being performed. This is an analysis of the job and the requirements for performing the work. Also known as a task analysis or job analysis, this analysis seeks to specify the main duties and skill level required. This helps ensure that the training which is developed will include relevant links to the content of the job.
- (d) **Performance Analysis:** Are the employees performing up to the established standard? If performance is below expectations, can training help to improve this performance? Is there a Performance Gap?
- (e) **Content Analysis:** It is the analysis of documents, laws, procedures used on the job. This analysis answers questions about what knowledge or information is used on this job. This information comes from manuals, documents, or regulations. It is important that the content of the training does not conflict or contradict job requirements. An experienced worker can assist (as a domain expert) in determining the appropriate content.
- (f) **Training Suitability Analysis:** Analysis done to decide whether training is the desired solution. Training is one of several solutions to employment problems. However, it may not always be the best solution. It is important to determine if training will be effective in its usage.
- (g) **Cost-Benefit Analysis:** Analysis of the return on investment (ROI) of training. Effective training results in a return of value to the organization that is greater than the initial investment to produce or administer the training.

Objectives of the Study

The following objectives were formulated.

- (a) To identify the factors affecting Training Needs.
- (b) To identify the association between the study variables

Purpose of Study

- (a) Training is the favorableness or unfavorableness with which the employee view their work
- (b) Training may be considered as a dimension of morale and morale could be a source of training. Attitudes are predispositions that make the individual behave in a particular way. Training in order to make sound decision both in preventing and solving employees problems this survey discuss the types of benefits that management can gain and the condition under which a study of training will be most likely to succeed.
- (c) Training survey can produce positive, negative results. If properly planned and administered they will produce a number of important benefits. One benefit of the survey is that they give

management as indication of general level of training provided in a company. Survey also indicates specific area of skilled and unskilled groups of employees. Their feelings all focused on which departments are particularly affected.

Need and Importance

- (a) The importance of human resource management is increasingly realized in organizations. This realization has come out because of increasing complexity of task of manager and administration.
- (b) Training programme has become a noticeable feature of an organization. It fundamentally depends up on the organization culture and the resultant attitude of the labour close to their work.

2. REVIEW OF LITERATURE

Training is a learning experience in that it seeks a relatively permanent change in an individual that will improve his or her ability to perform on the job (Nel, Gerber, Van Dyk, Haasbroek, Schultz, Sono and Werner, 2004)^[8]. Swanepoel, Erasmus, Van Wyk and Schenk (2003)^[9] confirm that employee training is job related learning that is provided by employers for their employees. Masitsa (2005) defines training as a process of preparing or being prepared for a job with the focus on enhancing the specific skills and abilities required to perform the job. Martins (2005)^[10] defines training as any activity empowering an employee to implement a new functional operation. Cavaleros, Van Vuuren and Visser (2002) define training as an experience, discipline or regimen that causes people to acquire new predetermined behaviours.

Training, according to Erasmus and Van Dyk (1999)^[9] is regarded as a systematic and planned process to change the knowledge, skills and behaviour of employees in such a way that organizational objectives are achieved. It is a learning experience in that it seeks a relatively permanent change in an individual that will improve his or her ability to perform on the job.

De Bruin, De Bruin, Derksen and Cilliers-Hartslief (2005)^[12] conducted research on predictive validity of general intelligence for adult basic education and training outcomes. This study explored whether scores on intelligence tests and personality questionnaires can predict performance in an Adult Basic Education And Training (ABET) programme. The relationships between measures of general intelligence, personality traits, practical and academic training achievement of people with limited formal education were investigated. The results showed that non-verbal intelligence tests and personality inventories can be potentially useful in the prediction of performance in an ABET programme. This correlation showed that intelligence tests show predictive validity even for completely unskilled jobs.

3. RESEARCH METHODOLOGY

Research Design

Descriptive Research seeks to ascertain certain magnitude by making complete study of the topic. It is used in this project to find the effectiveness of job satisfaction.

Sample Design

Population: Chennai IT employees were selected for the purpose of the study. The total number of questionnaires distributed were 500 of which 445 were received and only 430 questionnaires fulfilled the conditions of the study.

Sample Size

Sample is described as a portion chosen from the population. The sample size chosen for this study is 445.

Sampling Method

There are many types of sampling methods. In this study convenience sampling is used for selecting the samples.

Data Required

The data required is collected mainly as primary data by circulating questionnaire to all the persons chosen as sample. The Employees were requested to indicate their agreement to the questions. A Likert item is simply a statement which the respondent is asked to evaluate according to any kind of subjective or objective criteria generally the level of agreement or disagreement is measured.

Nature of Data

Primary data: These are fresh data which are collected for the first time such as observation, personal interview, and questionnaire.

Secondary data: These are second hand information which has been already in to statistical process such as journals, books, websites, and literature.

Data Collection Method

Questionnaire: Questionnaire method of data collection is quite popular, particularly in case of big enquiries. It is being adopted by private individuals, research workers, private and public organizations and even by governments, a questionnaire is sent to the persons concerned with a request to answer the questions and return the questionnaire.

Statistical tools: The information gathered and analyzed by using appropriate tools such as:

chi-square Test

Chi-square test is used to find out whether there is relationship among various groups. It is calculated using following formula:

$$\chi^2 = \sum (O_1 - E_1)^2 / E_1$$

Where,

O = Observed Frequency

$$\begin{aligned} E &= \text{Expected Frequency} \\ &= \text{Row Total} \times \text{Column Total} \\ &= \text{Grand Total} \\ I &= 1, 2, 3, \dots, n \end{aligned}$$

Percentage Analysis

Percentage refers to special kind of ratio. Percentage is used in making comparison between two or more series of data. Percentage is used to describe relationship.

$$\text{Percentage of Respondents} = \frac{\text{Number of respondents}}{\text{Total respondents}} \times 100$$

Weighted Average Method

The term 'weight' stands for the relative importance of the different items. The formula for computing weighted average is

$$= \frac{\sum WX}{\sum W}$$

Where,

W – Weights

X – The variable

Hypothesis Testing

Hypothesis: it means tentative generalization the validity of which remains to be tested. In short it deals certain assumptions made in the study.

Null hypothesis: a hypothesis which assumes that there is no significant difference between sample statistics and population parameter is called null hypothesis. It is denoted by H_0 .

Alternative hypothesis: a hypothesis which assumes that there is significant difference between sample statistic and population parameter is called alternative hypothesis. It is denoted by H_1 .

Steps in hypothesis testing:

1. Null hypothesis H_0 is to be defined.
2. Alternative hypothesis H_1 is also defined after a careful examination of the problem.
3. Level of significance is fixed (If not given take 95%) and Z_α is noted.
4. The test static $Z = X - X^-$ is computed.
5. Compare Z and Z_α . If $Z < Z_\alpha$ H_0 is accepted, H_1 is rejected (There is no significant difference Z and Z_α). If $Z > Z_\alpha$ H_0 is rejected, H_1 is accepted.

Conceptual Framework

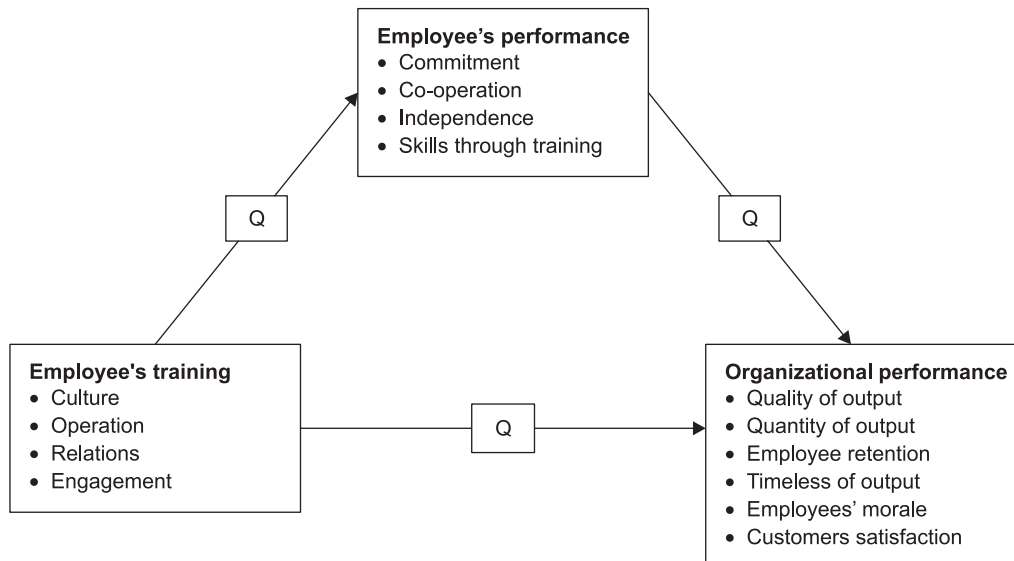


Figure 47.1: Source: Developed by Researcher, 2013

Data Analysis

For data collection, this study employed following statistic techniques, like factor analysis, chi-square test and structural model equation to analyze data.

Hypotheses

H01: There is no significant association in between factors with their Training Need in the Information Technology Sector.

H02: There is no significant model fit among the dimensions of Training Need Analysis.

Factor Analysis

Aggregate data collected from all the 430 respondents from IT companies by using the instrument, were factor analyzed to know its internal structure and grouping of items. Factor analysis was used to empirically assess the dimensionality of the scales which is used for testing the hypotheses. The questions measuring the design features of Training Need Analysis were factor analyzed using the principal component method. The Bartlett's Test of Sphericity (P equal to 0.000) indicates that the correlation matrix has significant correlations among some of the variables. Kaiser-Meyer-Olkin measure of sampling adequacy showed that 0.60 is good sampling adequacy. Further tests were used to determine the number of factors to be extracted; nine -factor structures were suggested.

This analysis was conducted by using Principal component's method with varimax rotation. The rotation revealed 9 factors with Eigen value greater than 1 and factor loading exceed ± 0.62 explaining 71 percent of total variance. It yielded 9 factors with Eigen value more than 1 (refer Table 47.1) the table revealed that the loading vary from 0.62 to 0.88.

Table 47.1
Factor analysis

<i>Items</i>	<i>Frequency</i>	<i>Percentage of variance</i>
Attitude (A)	0.620	38.73 percent
Skills (S)	0.770	31.29 percent
Competencies (C)	0.778	51.52 percent
Education (E)	0.723	52.60 percent
On the job Training	0.880	61.78 percent
Off the job Training	0.781	45.28 percent
Absorptive capacity (AC)	0.850	52.54 percent
Knowledge sharing (KS)	0.790	29.00 percent
Training Need Analysis (TNA)	0.860	69.78 percent

Source: Primary Data

After factor analysis, 9 factors were named as (1) Attitude, (2) Skill, (3) Competencies, (4) Education, (5) On the job training, (6) Off the job training, (7) Absorbing capacity, (8) Knowledge sharing and (9) Training Need Analysis (TNA).

Chi-Square Test

H₀1: There is no significant association in between Factors with their Training Need in the Information Technology Sector.

H₀1: There is significant association in between Factors with their Training Need in the Information Technology Sector.

Table 47.2
Chi-square test for Factors with their Training Needs

<i>Factors</i>	<i>Training Need Analysis</i>			<i>Row Total</i>	<i>Chi Square Value</i>	<i>P Value</i>
	<i>Low</i>	<i>Average</i>	<i>High</i>			
Low	40 (43.5) [54.1]	52 (56.5) [14.1]	–	92 (17.8)	208.52	0.000**
Average	32 (9.8) [43.2]	272 (83.4) [73.5]	22 (6.7) [30.6]	326 (63.2)		
High	2 (2.0) [2.7]	46 (46.9) [12.4]	50 (51.0) [69.4]	98 (19.0)		
Column Total	74 [14.3]	370 [71.7]	72 [14.0]	516 [100.00]		

Significant * $p < 0.05$ ** $p < 0.01$

Since P value is less than 0.01, and Chi-square value being 208.52, there is a statistically significant association between the factors and their Training Needs. Therefore the null hypothesis is rejected and alternative hypothesis is accepted.

Table 47.3
Structural Equation Model Indices

<i>Indices of Training Need Analysis</i>	<i>Model</i>
Goodness of fit index (GFI)	0.97
Adjusted Goodness of fit index (AGFI)	0.93
Root mean square residual (RMR) Mulaik et. al., (1989)	0.45
Parsimonious (PGFI)	0.37
NFI	0.82
Hoelter Critical N (99% CI)	267

The results of path analysis for the model shown in the Table 47.3, suggest a good fit with the data. The parameters are statistically significant, supporting the theoretical basis for assignment of indicators to each construct.

Table 47.4
Importance of Training to the Employees

<i>Variables</i>	<i>1</i>		<i>2</i>		<i>3</i>		<i>4</i>		<i>5</i>	
	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>
Job satisfaction	3	5	6	11	9	16	28	51	9	16
Work motivation	2	4	9	17	13	24	24	44	6	11
Chances of promotion	7	12	4	7	16	28	21	37	9	16
Boost morale of employee	3	5	7	13	13	24	24	44	8	15
Skill (s) level	1	2	1	2	12	22	28	52	12	22
Encourage team work	1	2	4	7	12	22	29	54	8	15
Job performance	1	2	4	7	8	15	–	55	12	22
Transfer of skills & knowledge	–	–	88	15	8	15	28	51	11	20
Improves Communication	55	5	5	9	15	27	22	40	10	18

Respondents were asked to rank the importance of training to their organisations with regard to seven aspects of training related effectiveness, is training effectiveness related to organisational achievements? The empirical findings indicated that the percentage proportion of each variable to :overall success of the organisation to be 70%, improves of the organisation financial status contributed by the training to the organisations to be 72%, on this variable the public owned organisations (under government) did not respond to the question as a way of generating profits rather on the usage of the funds allocated to them.57% of the respondents agreed that training makes easier achievement of organisational goals into practice, 60% indicated that training has led to the organisations *t* to have employees with necessary skills to aid the organisation to achieve its goals. With regard to encouragement of culture of quality, 56% indicated that training promotes the culture of quality within the organisations, in attaining the market share it has been found that 69% have agreed that training has a role to play in achieving and keeping the company in the market place and 56% indicated that trained employees are retained in their organisations as indicated in Table 47.3.

Table 47.5
Importance of Training to the Organization

Variable	1		2		3		4		5	
	No	%	No	%	No	%	No	%	No	%
Overall success of organisation	-	-	7	13	10	18	25	45	14	25
Financial status	2	4	3	5	11	20	25	45	15	27
Achieve organs' goals	1	2	9	16	14	25	18	32	14	25
Employee skills acumen	-	-	7	12	16	28	21	37	13	23
Culture of quality	-	-	9	16	16	28	21	37	11	19
Increase market share	-	-	3	5	14	25	27	49	11	20
Retention of employees	1	2	9	16	15	27	20	36	11	20

Notes: Scale ranging from “very poor (1)”, “poor (2)”, “fair (3)”, “good (4)” to “very good (5)”.

There are two major methods of delivery of training: on-the-job and off-the-job. Table 47.3 lists two venues and ten delivery approaches or methods employed by organisations in imparting training to their employees. Respondents were asked to indicate their satisfaction against each method used. The empirical findings indicated that on-the-job training was most preferred, job rotation (53%) with the least being coaching (40%) and for off-the-job training the highest score goes to role playing (59%) and the least being internet teaching (34%).

Table 47.6
Methods of training employees in the organisation

Variable	1		2		3		4		5	
	No	%	No	%	No	%	No	%	No	%
<i>On the job Training</i>										
Apprenticeship	2	6	6	19	9	28	9	28	6	19
Job rotation	2	4	14	13	14	30	17	36	8	17
Coaching	2	4	13	28	13	28	13	28	5	12
<i>Off the job Training</i>										
Role playing	3	11	6	22	2	7	9	33	7	26
Simulation	2	5	4	11	9	24	18	47	5	13
Case study	4	12	3	9	8	24	8	30	8	24
Video tapes	7	21	3	9	10	30	10	24	5	15
Group software	5	18	5	18	7	25	7	25	4	14
Internet training	5	19	3	11	10	37	10	15	5	19

The respondents were also asked to indicate how the training effectiveness can be measured or evaluated once the trainees are in the workplace. The results indicated that in Table 47.4, that most indicators used for measuring the training is basic production skills (68%) and the least, accident rate (20%).

Table 47.7
Evaluation/Assessment Method (S) Used in Training Variables

	1		2		3		4		5	
	No	%	No	%	No	%	No	%	No	%
Basic production	8	15	29	53	15	27	2	4	1	2
Basic quality tools	8	15	20	38	4	37	4	8	1	2
Labor turnover	3	6	21	42	6	40	6	12	–	–
Absenteeism	3	7	16	35	7	28	7	15	7	15
Accident rate	3	6	12	24	10	43	10	20	4	8
Revenue	8	15	22	41	3	37	3	6	1	2
Machine utility & d productivity	5	8	26	43	16	27	12	20	1	2
Problem solving skills	9	17	22	41	17	31	5	9	1	2
Material wastage	6	11	14	26	19	36	9	17	5	9
Customer complaints	11	20	14	25	18	33	9	17	2	4

4. FINDINGS AND SUGGESTIONS

The findings of this research support the literature review in number of key areas. First, organisations tend to recognize the need for, and potential of, training programmes for their existence. However, (Tennant et. al., 2002) argues that it is questionable whether the depth of training is sufficient to realize the necessary benefits of behavioural change and skill development leads to the realization of business benefits.

Employee training and development of employees is an important issue for organisations in general, and it is particularly an issue for all organisations in both private and public sector due to the potential loss of valuable knowledge and skills with the departure of key people within the organisation. Organisations are cognizant of this fact and the majority sees employee training and development as an important priority in organisation. Since the workforce is getting more and more diverse, training is a ‘must’.

To conduct training effectively is critical for any organisation to acknowledge the diversity of employees. In addition there is need for evaluation and continuous improvement of training and development programs in an organisation to gauge its effectiveness.

Organisations stand to benefit either directly or indirectly from training and development of employees. In particular, the employees who are part of the organisations that are committed to training gain significantly from their training in terms of improved job performance, job satisfaction, work motivation, chances of promotion, skills level, team work, transfer of skills and knowledge and communication. Additionally, organisations that are committed to training gain an advantage over non-committed firms with respect to employee training and development.

From the study we conclude that training plays an important role to the organisation itself. Taking the mean of the overall percentage, 63% of the respondents indicated that training has a positive role in the organisations in which they work for. The importance is reflected in the overall success of the organisation, transfer of organisational goals, skill set needed in the organisation, culture of quality, improved market share and retention of existing staff.

However, the study conducted by (Acton and Golden, 2003) showed that organisations provide high quality training do not see their employees stay longer with them. An explanation for this was while employees see training as important for career development; it is not one of the key factors that influence the decision to stay in a particular job. Furthermore, (Plant and Ryan, 1994) argues that it is also difficult to measure the correlation between implementation of training and the overall success of the organisation. The extent to which the success of the organisation can be attributed to the use of strategically planned training is difficult to prove, therefore, be difficult to justify. This is particularly the case when the success of the company is measured in financial terms, as per se can improve the financial performance.

The research also reflects that the most used training methods are job rotation (on-the-job training) and role playing (off-the-job training). The findings of (Matthew and Ueno, 2000) were that job rotation injects new ideas into different departments of the organisation and it breaks down the departmental provincialism. One of the major reasons for the reason why employees might have chosen this type of training might be that the employees who are considered to have potential for major executives are trained using it so as to gain job experience across the organisation. For off-the-job training, employees chose role playing as the delivery method they found appropriate for them.

However, it cannot be concluded that the two methods are the best, this would require more research in more settings as the type of training depends by largely on the type of the job the employee is engaged in and also some employees can be trained both on-the-job and off-the-job.

On the face value, the results show that basic production skills is being widely used to measure the effectiveness of training; however, more detailed analysis shows that not to be the case. This may be due partly to the present economic situation which encourages organisations to drastically prune budgets which cannot be justified, coupled with lack of tools and resources to implement an evaluation strategy. Marketers indicate that customer complaints show that training is ineffective in the service or the product offered. A company can produce more products with lot of defects and that does not reveal the true reflection of training effectiveness rather ineffectiveness.

Limitations

1. This research has included 445 observations; the findings should be confirmed through a larger sample for generalization.
2. This study is delimited to only one particular professional group, i.e. Information Technology employees. So the results cannot be generalized to all companies.
3. Thirdly, the data collection was restricted to IT personnel in South India consequently, due to the cultural factors that characterize the sample under investigation, the results may not be confirmed when examining the same sector in other parts of the country.

5. CONCLUSION

An organization is as good as its people. If an organization is good, its people enjoy the fruits. The people manning the organization, whether be their category or level, cannot disown the responsibility of making it good or bad. Competence Based Training Need Analysis Diagnostic tool helps in identifying job related

Training needs. Further analysis would help the organization in identifying particular training need of a team. Training should be offered according to level of expertise (basic, intermediate, and advanced). Training need Analysis is a most effective method of accessing, measuring and evaluating the employees in order to improve organizational and individual performance. Once the data is gathered at organisational, team and individual level, it bring together learning and development plan. The plan should not only identify the training requirements within the organisation, but should prioritise them and set out the ways in which the requirements can be met, the resources needed, the timescale, and the metrics for the evaluation for the training.

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