International Journal of Applied Engineering Research ISSN 0973-4562 Volume 10, Number 17 (2015) pp 37605-37609

Training and Development in IT sectors

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Abstract
Training is the organized procedure by which learn knowledge and skill of an employee for doing a particular job. Except manpower other resources are non-living but manpower is a live and generating resource. Manpower utilizes other resources and gives output. If manpower is not available then other resources are useless and cannot produce anything. Chennai is the third largest Information Technology (IT) service provider city in India. IT sector has provided many employment opportunities to more number of both technical and non-technical graduates. Most of the graduates are recruited in IT sector with higher salary and perks. Leading eleven Information Technology (IT) companies were identified based on NASSCOM's 2014 report. Questionnaire was prepared to measure the organizational effectiveness based on training and development practices. Questionnaire was administered among respondents to assess training program among IT companies. This study deals with the effectiveness of training program in organizational effectiveness.

Key Words: Information Technology, National Association of Software and Services Companies (NASSCOM), organizational effectiveness

Introduction

Training is the continuous, systematic development among all levels of employees of that knowledge and their skills and attitude, which conditions to their welfare and that of the company. (Planty. Cord and Efferson). "The term 'training' is used here to indicate only process by which the aptitudes, skills and abilities of employees to perform specific jobs are increased. (Michael J. jucios). "Training is the organized procedure by which learn knowledge and skill of an employee for doing a particular job." (Edwin B. Flippo).

"Training is the organized procedure by which learn knowledge and \ or skill for definite purpose." (Dale S. Beach). Every organization performs its task with the help of resources as men, machine, materials and money. Except manpower other resources are non-living but manpower is a live and generating resource.[1] Manpower utilizes other resources and gives output. If manpower is not available then other resources are useless and cannot produce anything. Out of all the factors of production manpower has the highest priority and is the most significant factor of production and plays a pivotal role in areas of productivity and quality. In case, lack of attention to the other factors those are non-living may result in reduction of profitability to some extent. But ignoring the human resource can prove to be disastrous. In a country where human resource is abundant, it is a pity that they remain under-utilized. In wording of Oliver Sheldon "No industry can be rendered efficient so long as the basic fact remains unrecognized that is human."

Chennai is the third largest Information Technology (IT) service provider city in India. IT sector has provided many employment opportunities to more number of both technical and non-technical graduates. Most of the graduates are recruited in IT sector with higher salary and perks. The leading IT companies in Chennai are Infosys, TCS, HCL, Wipro, IBM, HP, Dell, Polaris etc. (NASSCOM) [3]

Objectives of the study

- To analyze the current practices adopted among IT companies in Training and Development
- To analyze the relationship between Training and Development practices and Organizational effectiveness
- To assess the impact of Training and Development in Organizational effectiveness among IT companies

Research Methodology

Leading eleven Information Technology (IT) companies were identified based on NASSCOM's 2014 report [4]. Questionnaire was prepared to measure the organizational effectiveness based on training and development practices. Questionnaire was tested among 50 respondents for pilot study. List of respondents were selected by convenient sampling method from selected companies. The research design is descriptive in nature. Statistical tests such as simple percentage analysis, chi-square test, ANOVA and paired t test were conducted.

Limitations of the study

- The sample sizes were restricted to 100 employees, due to the time and financial constraints.
- Results cannot be generalized based on the study conducted by convenience sampling.
- The study result is subjected to change in future

Review of Literature

D.A. Olaniyan and Lucas. B. Ojo in the year (2008) carried out a research on "staff training and development: a vital tool

for organizational effectiveness". This paper is basically a conceptual paper. The author says that the need for improved productivity has become universally accepted and that it depends on efficient and effective training is not less apparent. It has further become necessary in view of advancement in the modern world to invest in training. Thus the role played by staff training and development can no longer be over-emphasized. Staff training and development are based on the premise that staff skills need to be improved for organizations to grow. Training is a systematic development of knowledge, skills and attitudes required by employees to perform adequately on a given task or job. New entrants into organizations have various skills, though not all are relevant to organizational needs. Training and development are required for staff to enable them work towards taking the organization to its expected destination[5]

Winfred Arthur Jr. and Winston Bennett Jr. (2003) suggest that training is the most valuable methods for enhancing the productivity of individuals [2]. In 2000, U.S. organizations spent enormous budget on formal training ("Industry Report," 2000). Given the importance of training it is necessary that both researchers and practitioners have to understand the relationship between component and the effectiveness of training and development efforts [6]

M.A.Quinones (1995) conducted a survey on **"**pertaining context effects: Training assignments as feedback" formed that it possible, employees need to be given a choice of what programs to attend and must understand how actual training assignments are made to maximize motivation to learn. It is suggested that giving trainees a choice regarding which programs to attend and honoring these choices maximize motivation to learn. This paper uses workplace-level data from the Australian Workplace Industrial Relations Survey to examine the extent to which the use of training and/or innovation by a workplace increases the likelihood that is has higher labour productivity than its competitors, and experiences high labour productivity growth[7]

Rouillier and I.L.Gold Stein (1991) carried out a study entitled "Determinants of climate for transfer of training" discussed on the role of peer and manager support for training. The key factor for success are positive attitude among peer and activities, manager's and peer willingness to provide information to trainees about how they can more effectively use knowledge, skill or behaviors learned in training on the job and opportunities for trainees to use training consent in their job[8]

Data analysis and interpretation

Table No.1 Classification based on number of training programs attended in a year

Sl. No.	Number of training	Respondents	Per cent
1.	1-5	28	28
2.	6-10	45	45
3.	11-15	19	19
4.	> 15	8	8
	Total	100	100

Source: Primary Data

Interpretation: From the table it is seen that 45 per cent of respondents attended 6-10 training programs in a year; 28 per cent attended 1 – 5 training programs; 19 per cent attended 11-15 programs and eight per cent of respondents attended more than 15 training program in a year.

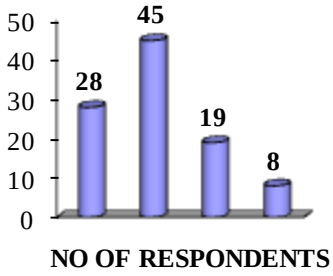

Figure No.1 (Number of training programs attended in a year)

Weighted average method

Table No.2 Ranking the factors of the area that were improved during the Training Programs

S. No.	Factors	Respondents opinion on improvement level					Average	Rank
		Highest	Good	Next	Least	Very least		
1	Flexibility	10	51	32	7	-	72.8	II
2	Communicative	8	49	29	9	5	69.2	IV
3	Leadership	21	40	18	12	9	70.4	III
4	Motivation	13	45	23	11	8	68.8	V
5	Initiative	40	31	15	14	-	79.4	I

Source: Primary Data

Inference: From the table it is evident that most of the respondents have rated initiative as first factor, Flexibility as second factor, Leadership as third factor; Communicative as fourth factor and Motivation as last ranking factors showed improvement during training programs.

Kalmogrov Smirnov test

The Kalmogrov Smirnov Test (KS - Test) tries to determine the prevalence of normal distribution. It's goodness of fit used to examine the distribution function of the random variable (X),

Test statistics T =Sup / F (x) - S (x) /

= Supremum of the absolute value of the difference between F (x) and s(X)

H◦ is rejected if T exceeds the 1 – α quartile (W1 – α) of the Kalmogrow Smirnov's Statistic.

Test 1: To find out the distribution of respondent's rating pattern about whether the training program have helped the employees to increase the competency.
H◦: Response Pattern obtained is uniformly distributed
H1: Response Pattern is not uniformly distributed

Table No.3 Test of Uniform Distribution

Opinion	F(x)	Cumulative Percentage	Null Hypothesis S(x)	Cumulative Percentage	Difference F(x) – S(x)
Strongly Agree	0.77	0.77	¼	0.25	0.52
Agree	0.09	0.96	2/4	0.5	0.46
Disagree	0.04	1	¾	0.75	0.25
Strongly disagree	-	1	4/4	1	-

Calculated Value is:
T [F (x) – S (x)] = 0.52

Tabulated Value is
T (tab) = 1.22 / √n for 5% significance level. When n = 5
T (tab) = 0.5456

Calculated value is less than tabulated value. H◦ is accepted.
Inference: Response pattern obtained is uniformly distributed.

Test 2: To find out the distribution of respondent's rating pattern about whether the relevance of the program to the Work / Function is satisfied.
H◦: Response Pattern obtained is uniformly distributed.
H1: Response Pattern is not uniformly distributed.

Table No.4 Test of Uniform Distribution

Opinion	F (x)	Cumulative Percentages	Null Hypothesis S(x)	Cumulative Percentage	Difference F (x) – s (x)
Extremely high	0.88	0.88	1 / 4	0.25	0.63
Extremely low	0.02	0.90	2 / 4	0.5	0.4
Unsatisfactor	0.08	0.98	3 / 4	0.75	0.23
Moderate	0.02	1	4 / 4	1	-

Calculated Value is :T (F (x) – S (x)= 063
Tabulated Value is:T (tab) = 1.22 / √n for 5% significance level.
When n = 5, T (tab) = 0.5456
Calculated value is more than tabulated value. H◦ is rejected.
Inference: Response pattern obtained is not uniformly distributed.

Chi – square test
Null-Hypothesis: (Ho): Person assessing the training needs is independent towards opinion on recommend employees for training.

Table No.5 Person assesses the training needs and recommend employee for training

S. No	Options	No of Respondents	Percentage (%)
1	**Immediate Superior**	43	36.8
2	Departmental Head	20	17
3	Training & Development Department	31	26.5
4	Personnel Department	11	9.4
5	Others	12	10.3
	Total	**117**	**100**

Source: Primary Data

Expected Frequency =117 /5 =23.4

Table No.6 Calculation of ψ²:

Observed Frequency (O)	Expected Frequency (E)	(O – E)²	(O – E)² / E
43	23.4	384.16	16.42
20	23.4	11.56	0.49
31	23.4	57.76	2.47
11	23.4	153.76	6.57
12	23.4	129.96	5.55
			31.5

Calculated $\psi^2 = \sum (O - E)^2 / E$
O – Observed Frequency
E – Expected Frequency
Calculated $\psi^2 = 31.5$
Degree of Freedom = (5 – 1) = 4 df at 5% level of significance
Therefore, Tabulated $\psi^2 = 9.488$; Since Calculated $\psi^2 >$ Tabulated ψ^2
Therefore, we reject the hypothesis.

Inference: Person assessing the training needs is not independent towards opinion on recommend employees for training.

Two – way analysis of variance

Null-hypothesis (Ho): There is no significant difference between ratings and factors of the areas that were improved in training program

Alternative hypothesis (Hı): There is significant difference between ratings and factors of the areas that were improved in training program.

Table No.7 Ranking the factors of the areas that were improved during training Program

No.	Factors	Respondents opinion on improvement					Total
		Highest	Next	Just	least	Very least	
1	Flexibility	10	51	32	7	-	100
2	Communicative	8	49	29	9	5	100
3	Leadership	21	40	18	12	9	100
4	Motivation	13	45	23	11	8	100
5	Initiative	40	31	15	14	-	100
	TOTAL	92	216	117	53	22	500

Table No.8 To find Correction factor:

X	X^2	Y	Y^2	Z	Z^2	A	A^2	B	B^2	X+Y+Z+A+B
10	100	51	2601	32	1024	7	49	-	-	100
8	64	49	2401	29	841	9	81	5	25	100
21	441	40	1600	18	324	12	144	9	81	100
13	169	45	2025	23	529	11	121	8	64	100
40	1600	31	961	15	225	14	196	-	-	100
92	2374	216	9588	117	2943	53	591	22	170	500
$\sum X$	$\sum X^2$	$\sum Y$	$\sum Y^2$	$\sum Z$	$\sum Z^2$	$\sum A$	$\sum A^2$	$\sum B$	$\sum B^2$	

$T = \sum X+\sum Y+\sum Z+\sum A+\sum B$

$T = 92+216+117+53+22$; $T=500$; $N=25$

Correction Factor= $T^2 / N = (500)^2 / 25 = 10000$

Table No.9 Analysis of variance table

Sources of Variation	Sum of Squares	Degree of Freedom	Variance	F
Between columns	4420.4	5 – 1 = 4	4420.4 / 4 = 1105.1	F = 1105.1 / 77.85 = 14.19
Between Rows	0	5 – 1 = 4	-	-
Residual	1245.6	(4) (4) = 16	1245.6 / 16 = 77.85	-

Calculated F=14.19; $V_1 = 4$; $V^2 = 16$

Tabulated F=3.01

Calculated F > Tabulated F

Therefore, we reject the hypothesis.

Inference: There is significant difference between ratings and factors of the areas that were improved in training program.

Paired test

Null-Hypothesis (Ho): Leadership is improved than Motivation

Alternative Hypothesis (Hı): Motivation is improved than Leadership

Table No.10 Leadership Vs. Motivation

	Highest Improvement	Next Improvement	Just Improvement	Least Improvement	Very least Improvement
Leadership	8	49	29	9	5
Motivation	21	40	18	12	9

Table No.11 Paired t test

X_1	Y_1	D_1	$d_1 – d$	$(d_1 – d)^2$
8	21	-13	-13	169
49	40	9	9	81
29	18	11	11	121
9	12	-3	-3	9
5	9	-4	-4	16
		d=0		396

$N = 5$

$d = d = \frac{1\sum d}{N}$

$= 0$ where $N = 5$

$S^2 = \frac{1\sum (d_1 - d)^2}{N - 1}$

$= 99$

$S = 9.95$

$T = \frac{d}{\frac{S}{\sqrt{n}}} = 0$

Degree if freedom = n-1 = 4
Table Value = 2.132

Calculated Value is less than Tabulated Value, H◦ is accepted.
Inference: Leadership is improved than Motivation

Findings of the study

Majority of the respondents (around 93 per cent) aware of types and aims of training program conducted for employees in the organization. It is seen that around 45% of respondents have attended training program 6-10 times in a year. Around 57 per cent of respondents agree that the objective of the training program is made clear in the beginning of the program. Around 53 per cent of respondents expressed the need training in their job/self-development. Around 40 per cent of respondents are highly satisfied with the course materials provided during the training program. Around 43 per cent of respondents assess training needs from the immediate superior. Around 83 per cent of respondents feel that the organization recognized the employees' improvement. Around 70 per cent of respondents feel that the supervisor enquiries regarding training contents of training program. Around 74 per cent of respondents have learnt from the program to accept/adapt to changes or new ideas. Around 88 per cent of respondents feel that the relevance of the program to the employees work / function is extremely high. Around 77 per cent of respondents strongly agree that the training program has helped to increase competency to carry out the job. Most of the respondents have benefited from the training program by attaining interpersonal skills, change of attitude, new knowledge and very good experience. Around 65 per cent of respondents say that the learning objectives of the training program have been achieved. Around 45.7 per cent of respondents suggest change of training method to improve the training program. Around 68 per cent of respondents expressed that department support is excellent.

Conclusion

Information Technology companies based at Chennai have incorporated useful training methodologies in their annual operating plan. The top leaders in HR department have strong belief in the improvement of organizational efficiency through proper training methods and development practices. Companies have signed Memorandum of Understandings with various consultancy organizations to design and implement unique and useful training program for the achievement of organizational efficiency.

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