

Effectiveness of on the job training, case study: Electric Power Distribution Company of ShirazHojat Moshtaghian Abarghoie¹, Hassan Moshtaghian Abarghoie², Zahra Bahari³, Jamshid Moshtaghian Abarghoie⁴

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Abstract: This study was systematically developed to examine the effectiveness of on-job-training (OJT) on the personnel of Electric Power Distribution Company of Shiraz and to present some offers in order to improve the periods. The participants were 80 experts and workers of company in 2008, summer, were chosen in the form of cluster sampling and then based on the Patrice model, they were assessed from the view point of their attitudes, knowledge's and skills. By means of questionnaire, knowledge testing and check list, the data were gathered and they were analyzed by use of descriptive methods, T and Z tests and coefficients of correlation. Results showed although the training periods had caused the learners to be relatively satisfied, this was not applicable to all of them, so that the experts were more satisfied than the workers. In addition, establishing these periods has meaningfully increased the knowledge level of the learners. Meanwhile, in comparison with the experts, the workers showed little changes. Regarding to the performance of the workers, although the scores average of evaluating the learners' skills was more than the ones belonged to those who had not participated in these periods, the difference between the scores average of evaluating control and sample groups of the experts were more than the ones related to the workers.

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1. Introduction

Organizations are basically known as the operational units related to the growth and development of the societies and each one has assumed part of the responsibilities in the process of development. There for, organizational society can have suitable growth by managing the organizations desirably. Certainly, desired management of the organizations is firstly related to the way of performing their human forces; the forces that can do their duties suitably by relying on their professional skills and cause the organization to reach progress and dynamism.

Today, the managers of the organization regard training and developing human sources as their main duties to optimize the organization and regarding to its profits in work environment, they invest capital. At present, many organizations, apart from their employers' formal education and regarding dynamisms of sciences and also job needs, establish different and continual training periods for them. Organizations promote the knowledge and vocational skills of their employees by training them,

and coordinate their performances to the aimed purposes.

Skilled human force is considered as one of the main elements which affects on economic, social and cultural development of a country. Training human force to learn needed skills and professions related to a job is one of the main ways to reach developing goals.

A 3-years survey in Sangapoor has revealed that 17 percent of this country's commercial and industrial companies have become bankrupt, where as this ratio has been less than one percent for those companies who have established training programs for their employees. (hammer, 1991). William James revealed that employers of the organizations use about 20-30 percent of their abilities to achieve the organizational objectives. Meanwhile their abilities could be increased by 90 percent, and by presenting suitable training (Bazaz Jazayeri, 2005). Strait & et al (2004) in his extensive research concluded that about 21 Percent of America's economic growth between 1957-1929 Developments that improve the quality of the workforce and improve the technology that both

factors severely are affected by education. During his surveys, Veleh (1970) perceived that increasing the training of agricultural skills by 10 percent causes 3-5% increase of return in America. Whereas, investing capital on land by using chemical fertilizer or machines, will only cause 1-2 percent increase of profile (Strait et al, 2004).

The employees training in organizations is very important and some authorities have called it self – management. It means that the bases of management will be unstable and endangered without employees training (Abtahi, 1994).

George Strauss and Leonard Sales (2004) believe that efficiency of each organization is directly related to the correct method of training employees of it. One of the most effective training works to prepare the human force of the organizations doing job and professional duties is on the job training. John F Mee (1985) says: “on the job training means the systematic and continued improvement of employees’ knowledge, skills and behaviors which help the welfare of them and their organizations to increase. Pear and Gutter regard on the job training as a kind of systematic effort which its main purpose is to coordinate the future wishes, interests and needs of persons to the needs and goals of the organization, in the form of some works that they must do. (Vajargah Fathi, 2005). By these trainings, the employees can acquire skills, abilities, knowledge’s and attitudes possible during all times. Using human force and tools suitably, correct and desired management of the organization and finally decreases of expense, are the results of employees’ on the job training programs (Abili, 1993). On the job training is suitable when:

1. There is a logical relation between the expanse of the training and its result.
2. The training is in-time.
3. The persons participating in the programs transfer their information to the work environment and condition (Beddingham, 1997).

Today, organizations are making great efforts to enhance their effectiveness’s. There are many evidences that organizations can increase their effectiveness’s by investing on training the employees. In addition to affect the increase of effectiveness and efficiency of human force, on the job training affects on the job – satisfaction of the employees; because each employee is interested in the growth and the progress and also being familiarly with new scientific advancement related to the aimed skill to increase the quality of his/her work. In other word, training causes person to increase his / her adaptation with the work environment and the organization and causes him/her to be obliged to his/her responsibilities. As a result, it increases the

satisfactions of the employees (Ismaeli, 2001). In a survey about on the job training, Robert, Rehner (2008) resulted that these trainings could positively affect on the salaries and the wages of the employees.

Effectiveness is a concept that consists of four levels: satisfaction, learning results, job behavior and organizational benefits (Kirckpatrick, 1998). The effectiveness of corporation training is not only caused by training characteristics but is also influenced by trainee’s characteristics and organizational characteristics. With regard to trainee characteristics evidence exists for the impact of age (Hasting et al. 1995), level of education (Gielen, 1995), self-efficacy (Gielen, 1995; Hastings et al. 1995), perceived relevance of training (Ameel 1992) and job involvement (Brown & leigh, 1996; Gauthier, 1995; Gielen, 1995). The influence of the supervisor (and sometimes the influence of colleagues) on the effectiveness of corporate training was evident in the work of Brinkerhoff & Montesino, 1995; Gielen, 1995; Gielen & Klink, 1995; Xiao, 1996.

Companies expend considerable money and resources to train employees on how to do their jobs (Paradise, 2008). However, it is questionable whether training programs actually change employee behavior after implementation. For example, In the case of US companies, only 10–15% of training is applied to work (Sevilla & Wells, 1988).

To train employees and directing them toward the most effective way is based on a suitable system to evaluate on the job training programs in the organizations.

Stufflebeam & et al (1989) Know evaluation as a process to determine and prepare the descriptive and judgment information about the value and the importance of training purposes of the program, activities and out comes to direct decision – making, answer and inform (Bazagan, 2003). In evaluating the effectiveness of educational programs, most often to evaluate program effectiveness will be addressed. In evaluating the effectiveness of training courses about the desirability of the final outputs and outcomes to be judged in comparison with the goals of period .in the other hand, the concept of effectiveness, answered this question, is how much output the educational system of the utility is looking for (that same)?

Choosing a suitable criterion to evaluate the effectiveness is not so simple. Because of a general theoretical model that provides the best criterion is not introduced.

Kontz believes that the changes in beliefs, knowledge, attitudes, emotions and actions of partnerships during the course of the group have to determine the effectiveness of (Bazagan, 2003).

Although the Different approach and several models, such as goal-oriented model of Tyler, method of Sullivan, Patrick model, Dephilips method and so on has been proposed in the area of the effectiveness at time, but still the goal-oriented model as the best known and most common approach, both in theory and practice in the area, is dominant (Bella & Grushecky, 2006).

Despite the Electric Power Distribution Company of Shiraz costs and efforts spent on training annually, is still no evidence about the usefulness and effectiveness of these course. And questions about its usefulness for the organizers and participants of the courses and other decision makers have been brought for discussion. So, the expansion and modification of these courses deal with the uncertainties that they can turn to decide on the course with more confidence and make sure. Accordingly, in the present study is to evaluate the training staff Electric Power Distribution Company of Shiraz, the effect of training on employee attitudes, knowledge and performance is studied.

2. Material and Methods

2.1. Participants

A sample of 80 persons from all of participants (147) of short-time on the job training periods in Electric Power Distribution Company of Shiraz in 2008, summer, participated in this study. (Table1)

In this survey, the table and correlation of Morgan and Kirisy (1970) was used to describe the current condition and estimate the value of needed sample, regarding to the studied variable which is qualitative one.

Table1. Distribution of sample in Period, Gender, and Job categories

Total	Male	Female	Job categories	Period
37	30	7	Expert	Improve processes
43	43	0	Worker	Of storage

2.2. Instrumentation

In this survey, we used the scale of opinion poll, test, check list and questionnaire to gather needs data.

Opinion Scale : The researcher – made scale was used to estimate the attitudes and feelings of participants to word the on the job training period. This scale included the criterions such as the learners' satisfaction level (6 items), training content (9 items) 2 the way of presenting subjects (8 item) and training method (9 items). The aimed items was

designed according to the Likret spectrum (absolutely agree-absolutely disagree) and it was scale as 10 – units grading scale from 0 -10. Zero (0) was regarded as absolutely disagree and 10 was regarded as absolutely agree.

It was used to validate the scale and collect the evidences related to its validity, and from the view points of experts and in asters, it was used to collect the items of scale. The estimated internal consistencies of the adopted scale by the Cronbach's alpha for the total scale of opinion poll (32 items) was .97 , and for training period , training content, presenting subjects and training method, found it ranged between .43 to .94.

Test: In order to measure the level of learners' knowledge and information during on the job training periods, researcher- made tests were used.

The validity of content was used to validate the knowledge tests of on the job-training periods and collect the needed evidences. The validity of content was used through making the articles of the test and it was provided by comparing its articles to the goals and view points of the experts.

The estimated internal consistencies of the tests, using Cronbach's alpha, for testing the improvement period of the process and testing the principles of storekeeping were respectively .89 and .72.

The questionnaire related to the effectiveness of performance.

In this survey, the evaluating forms of performance collected by Electric Power Distribution Company of Shiraz were used to examine the performance of learners and to determine the effectiveness of presented trainings in the real work environment.

The evaluating forms (related to the principles period) contained, items which was graded in the likret scope. The minimum score was zero. Which means absolutely weak, and the maximum one was 20 which means the excellent. The permanency of this from was achieved by calculating the coefficient of cohesion between two independent evaluations (supervisor and manager).

The estimated permanency coefficient by this method was .84. The forms used to evaluate the employees and the experts (related to the improvement period of processes), contained 7 items in the likret scope. Zero was the minimum score which means absoltully weak and 20 was the maximum one which means the excellent. The coefficient of permanency was estimated .79 by Cronbach's alpha.

2.3. Methods

This study used to kirkpatric model to achieve her aims. In this three-step evaluation is recommended that training include:

- 1- Reaction: To what degree participants react favorably to the learning event.
- 2- Learning: To what degree participants acquire the intended knowledge, skills, and attitudes based on their participation in the learning event.
- 3- Behavior: To what degree participants apply what they learned during training when they are back on the job.

3. Results

First level –Reaction

In this level Evaluating was aimed to examine the satisfaction of learners from training periods.

In this regard, using from available sources and the view points of experts and masters, a scale to measure the attitude which contained to questions, was collected. The scale immediately after the holding of training courses, were completed by trainees.

To analyses the scale of opinion poll, at first each choice related to the scale was valued in the scope of 0-10.0 (Zero) means absolutely disagree and 10 means absolutely agree. In order to calculate the final score of a period, at first the related main index to any of the questions was determined, and then the average was calculated for each.

Results showed, although the learners believed, that OJT has been able to provide satisfaction. But not quite good enough, so that the average participant in a range of opinions 10 Degree (0 Means completely dissatisfied and 10 Means completely satisfied), 7.44 was. They suggest that the relative satisfaction.

Meanwhile, some cases such as including the management of business activities, the appropriateness of content with prior knowledge, training and availability of sufficient material were not exposed to their satisfaction. The average attitude of the participants about these three categories is 6.7 and it shows the low satisfaction.

Also held during the general satisfaction of all learners are not provided. So that 40 Percent of people with less than average ideas 7.00 and only about half of those in the usual sense of satisfaction and were more.

Second Level – Learning

In order to find out the effectiveness of OJT programs on students' knowledge, t-test dependent groups were used. In the context of the implementation period (Of storage & Improve processes), the subjects were placed under the pre-test, the training was conducted and three week after the end of the period, the test was run on the same subjects and the results of pretest and posttest were analyzed.

According to the results, there is a meaningful difference ($p < 0.001$) between the scores of sample groups in pre-and post-test related to the improvement of process period and the principles of storage (Table 1).

Table2.the difference between mach groups in knowledge scores for learners before and after training (Os, of storage; Ip, Improve processes)

Period	Pre-test		Pos-test		df	t
	M	SD	M	SD		
OS	4.83	1.83	7.36	2.57	35	-7.67*
IP	6.27	2.42	11.46	4.36	27	-10.49*

* $p < 0.001$

Third level –Behavior

In the third level, the effectiveness' of training period in the practical work environment has been evaluated and it shows the created behavioral changes of the learners.

In other word, the degree of displacement of the learned subjects to the practical work environment has been evaluated.

The control and experiment groups were used to discover the effectiveness of on the job training periods on the learners' performance and to answer this randomly selected to control the nuisance variables, was composed of those exports and workers who were analyzed without taking part in training period. The gathered evaluation forms by Electric Power Distribution Company of Shiraz were distributed among the supervisors, learners and control group to evaluate its employees in work environment with a graded scope (0-20).

The average scores of them were considered to compare the results of control and training groups. According to the findings, although average of evaluation scores belonged to the skills of those who have participated in training periods is more than ones belonged to those who have not participated in, the difference between the average of evaluation scores belonged to the control and sample groups, in experts (learners of improvements of process) is more than in workers (learners of principles of storage). (2.38 compared to 1.21 in 20 scores scope) (Table3)

Table3. The difference between groups in skills score (Os, of storage; Ip, Improve processes)

Period	control		experiment		df	z
	M	SD	M	SD		
OS	11.32	1.92	12.57	0.96	70	-3.47*
IP	12.73	1.63	15.11	0.48	54	-7.46*

* $p < 0.05$

Based on the views of managers and supervisors' on the job training period related to the principles of has caused the performance and the job behavior of learners to improve in some cases such as : using learned material in work activities and increasing employees' efficiencies, the way of arranging parts. But it has a little affect on replacement of parts, preparing parts in store and being familiar with the way of loading.

Also, according to the views of managers and supervisors, the improvement period of processes has been suitable in cases such as increasing efficiency, using learned material during working, recognizing related processes, recognizing the processes under the owner ship, using related soft-wares and improving the indexes of evaluating processes.

Other Findings

In this survey, the spearman correlation was used to find the relationships between main variables of the survey – attitude, knowledge and performance.

In general, there is a meaningful relationship between the variables such as attitude and knowledge ($r=0.55$). It means that about 30 percent of changes in the knowledge of the learners have been determined by attitude variable. Also, a meaningful relationship between attitude and performance variables was estimated ($r=0.73$). It means that more than half of changes in the performance of learners are determined by their attitudes. Also, there is a meaningful relationship between knowledge and performance variables ($r=0.71$) and it means that 49 percent of performance change is defined by knowledge variable. And all of correlation coefficients are meaningful at 0.05 levels.

4. Discussions

Reaction of the learners toward the periods:

According to the results, the average view of more than half of learners toward the generality of the periods has not been desired, and only 35 percent of participants have been satisfied. On the other hand, the average views of them have been estimated about 7.4 and it shows their relative satisfaction. Generally, although the training periods had relatively caused the satisfaction of the learners and their attitudes toward these periods was not negative, it was not true to all established periods. Therefore, dissatisfaction of the workers was more than the experts.

Undoubtedly, the efficiency of each organization is directly related to the correct method of employees learning's, and planning of training periods is firstly based on the job needs of participants and coordination of training subject with these needs.

Therefore, relative dissatisfaction of persons may be related to incorrect planning and un-coordination of training subject with their real needs in the work area.

The learned subjects of learns in these periods:

The findings revealed that the establishment of these periods has meaningfully increased the level of learners knowledge's at two training periods-statistically ($P \leq 0.001$).

These results are coordinated to the results of the survey of Rezazadeh (1994) and Salehezadeh (1997); but we should notice that this increase is not practically desired, so that the changes of average scores in improvement and principles of periods are respectively 5.17 and 2.52 for after and before times of the training. On the other hand, determination coefficients (square of correlation coefficient between pre-and post-test) of the scores of the participants in sample group for both groups of learners are respectively 0.72 and 0.41. It shows that 41-72 percent of resulted changes of these scores are based on the training and the remained is based on the related unintentional errors. Therefore, although the training was effective but for all groups not true. One reason may be related to low satisfaction of workers from established periods, specially, about the incapability of training subjects, its unavailability and little use of training technologies and un- adaptation of the content to their real needs.

Learners Performance:

Findings revealed that although the average score of evaluating participants' skills is more than one belonged to those who have not participated in; the difference between the average scores of experts is more than workers.

The storage period have not so in erased the efficiency of workers and also the use of learned subjects in their real work area (The average of supervisors' views is about 12 in a 20 scores scope). But we should notice that this was not true about all workers and activities, so that the supervisors believed that presented training could increase the efficiency, the use of training materials in work activities, being familiarly with holding place and it was true about half of the employees, but it had a little part in recognition of parts, loading program, preparing and the way of carrying parts. From the viewpoints of the supervisors, most of workers appeared middle.

This condition was better about the learners of improvement period, So that, according to the findings, the total average of scores of evaluation was approximately 15 (in a 20 scores scope). Meanwhile, from the view points of the managers and

supervisors, the level of performance of more than 60 percent the participants in sample group for both groups of learners are respectively 0.72 and 0.41. It shows that 41-72 percent of resulted changes of these scores are based on the training and the remained is based on the related unintentional errors. Therefore, although the training has been affective, it is not true about all groups.

Of workers was properly evaluated relating to the affect of learned subjects on the increase of efficiency, the use of training material in work activities, recognition and improvement of processes, accepting the suitable software's and participation of person in the evaluation of processes.

At all, the results show the relative effectiveness of presented trainings in the real work area. But, this effectiveness which is not comprehensive, related to the learners of principles, is caused by the weakness of learned subjects and their negative reactions to the presented trainings. In other word, the negative attitude of participants toward the periods is a main factor for the weakness of knowledge and also their practical skills in the work environment. Other findings verify this matter (Soltanie, 2001). This conclusion is relatively correct, because other findings of this survey demonstrate that there is meaningful and demonstrates that there is a meaningful and positive correlation between some variables such as attitude, knowledge and performance.

So, there is a positive and meaningful correlation between attitude and knowledge (by 0.55), the correlations between attitude and performance, knowledge and performance have been estimated 0.73 and 0.71, respectively.

Therefore, as above mentioned, the reason for correlatively positive attitudes of the learners and also the weakness of their knowledge and performance, may be related to this subject that the content of the training does not conform to the practical needs of the works.

Other findings of this survey affirm this conclusion. So, according to the participants' words, one of the main weaknesses of these periods is that the contents of them are not practical.

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