

The Effect of in Service Training on Enhancing the Productivity of FJRC Personnel

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ABSTRACT: The aim of the research is to show "the effect of in service training on enhancing the productivity of FJRC personnel. The research method is descriptive. The population includes 420 people of FJRC personnel working on managerial, operational, and administrative levels whom have been selected randomly. The research literature was collected through library method. A questioner was used to collect information. Cronbach's alpha reliability through 0.94 is derived. The results show that the educational pillars in organizations are different. Pillars such as educational technology are on the first place. Content and method is in the second place and effective learning factors are on the third place. There are significant differences for other pillars such as teachers, evaluation, and structure and organs.

Key words: Productivity, Effectiveness, On- Job- Training, in-Service Training

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INTRODUCTION

The present age, is the age of wonderful and fast revolutions. Today, effectiveness and productivity are challenges that every organization, company, and government faces with. Fast up-to-dating of new economic and commercial blocks in global competitions is an unavoidable necessity that needs full changes of everything. HR Programming to achieve productivity is a priority for every manager.

Productivity is the essence of every program manager and company. Everybody is trying to find the factors, which lead to increasing productivity. If a country could not coordinate itself with global changes, the economic challenges, social, political, and cultural tensions, it would not survive.

Maximizing productivity needs familiarity and adapting the personnel with their working environment. In addition, to do this, we need updating of knowledge and scientific and technical skills to meet the aims of personnel and organization. Training helps personnel to perform their present and future duties (strategic view to organizational activities, which conceded very important in FJRC. The role of training could be considered on three dimensions of usefulness, saving resources, and creating human relations in the organization.

FJRC has programmed and implemented different training courses. This study indicates the effectiveness and efficiency of training courses (as effective factors on productivity) to show first, how productive training courses have been (with resisting on outlets and results). Efficiency evaluation is a multi-level evaluation. Effectiveness, regarding effectiveness of outlets and results, has been reviewed and issues relating to quality and quantity and up-to dating have been studied.

Human resources form wealth and capital of every organization and country. The main resources of every organization relay on HR. it means that using of investments recourses, and optimum production of organization resources relay on efficiency of personnel, information, intelligence, and Capability. Therefore, training is an introduction to development and efficiency of an organization. In-service training is a mechanism and activity, which could provide the basis to achieve a learner organization based on information. Evaluation of successfulness of programs and appreciation to precede the process are necessary for training courses.

Implementing activities such as efficiency, effectiveness, and needs analysis have various uses on the level of organization, profession, and personnel. Because performing such activities lead to better design of training courses with the aim of capability, so the first step to development of HR would be taken and such a person show undeniable performance personally and organizationally. On the other hand, doing the mentioned activities would pave the way to seek centralization and pivot ability the expenses of training and create a productive investment in training process in FJRC. So this study tries to answer this question that "how effective have been in-service training on the productivity of FJRC personnel?"

Objectives and Significance of the Study

The importance of the topic could be reviewed theoretically and legally. Theoretically, the necessity of this study is related to evaluation of effectiveness, efficiency, programming, and needs analysis. Moreover, this study could be a guide to reform and enhance of program process and in-service training politics by FJRC.

Because in-service training is one of the most important bases to adapt personnel with their duties and to coordinate with organization needs, the existence of any digressions of in-service training would question the basis of training system and will create many loses personally, organizationally, and socially in the form of consequent models (product, outlet, result). Proper implementation of in-service training would end to proper work process, decreasing expenses, increasing productivity fostering aptitude and motivating to perform duties.

General aims: to study the effects of in-service training on productivity of FJRC personnel, regarding four groups of managers, experts, operators, and administrative staff.

Exclusive aims:

- 1. Indication of the present situation of in-service training in FJRC and classifying training systems (open, semi-open, closed).**
- 2. Evaluation of effectiveness of in-service training in FJRC based in job title (manager, expert, operators, administrative)**

Research Questions

1. How is the training situation (attitude, systems) in FJRC and meets what kind of needs?
2. How is the training situation (aims, principals, approach / structure and organs /teachers /trainees/ content and method/technology and environment) in FJRC and how efficient is it?
3. Are there any differences between courses offered by FJRC (company courses) and courses offered by other centers (non-company courses)?
4. How the pivotal aims of the in-service courses are in FJRC and how effective has been each training course to organizational productivity?

Literature Review

Yadegari[1] in her research” the study of effects of in-service training on experts performance in Tehran mayoralty” with research question of “Have in-service training increased technical and cognitive Skills, discipline, cooperation, facilitation of works, learning how to use resources and equipment, and motivation among experts working for Tehran mayoralty.

The following results achieved: 1. training courses do not increase discipline 2. Training courses increase technical and cognitive skills of the experts.3. Training courses do not increase cooperation. 4: training courses do not increase motivation to perform duties. 5: training courses facilitate the process of complex works among the experts. 6: there are differences among participants regarding variables such as six, education, experience, and age.

Golamshahi [2] in his study “the study of the effects of in-service training on the performance of Tehran Telecommunication staff”, the following research hypotheses were used: 1: is there significant difference between views of male and female personnel about the effect of in-service training on their performance? 2: is there significant difference between single and married personnel about the effect of in-service training on their performance? 3: is there significant difference between personnel working for more than 15 years and those working for less than 15 years about the effect of in- service training. The following results achieved: 1: there is significant difference between views of male and female personnel about the effect of in-service training. 2: there is significant difference between married and single personnel about the effect of in-service training. 3: there is significant difference between personnel working for more than 15 years and those working for less than 15 years about the effect of in-service education.

Rajabian [3] in his research” evaluation of effectiveness of in-service training on the performance of Keshavarzi Bank staff, with the aim of studying the effect of in-service training courses on their performance. The research questions are as follow: 1: is there significant difference between male and female staff about the effectiveness of the courses on their performance? 2: is there significant difference between views of staff and the number of courses about the effectiveness of in-service training courses on their performance? 3: is there significant difference between work experience and views of staff about the effectiveness of in-service courses on their performance? The following results achieved: 1: training courses have significant effect on their performance. There are no significant differences between staff views’ and the number of courses, title, education, work experience, affecting the performance of staff.

Mackintosh and Hopkins [4] from Tennessee University in 2009 selected 45 people randomly who raise horse. They achieved the following results: all indexes in research increased after in-service training courses. Therefore, in-service training courses have been effective on their samples.

MATERIAL AND METHODS

The research method is descriptive. The results could be applied in organizations and companies. The aim of the research is to test theoretical concepts in real situations and to solve problems.

Sample Population and Sampling

The population includes 420 people working for FJRC on four levels of managerial, expert, administrative, and operational whom were selected randomly. 420 questioners were distributed among the FJRC personnel. 50 questioners among managers, 250 questioners among operators, 60 questioners among experts, and 60 questioners among administrative staff .

Collecting information

Two methods were used to collect information.

A: library: this method was used to collect information literature review.

B: questioner: 420 questioners were distributed among samples

Research tools

A questioner was used as main tool to collect information. The questioner includes nine educational pillars. Moreover, 56 questions which the researcher prepared. In the questioner first some information is given about the research. Then the information of participant was asked and finally 56 questions about related variables should be answered.

Likert scales of very low (1), low (2), average (3), much (4), very much (5) were used.

Validity and Reliability

To validate the questioner, first a questioner was prepared, using views and experience of psychologist and university professors. Then the questioner was modified by counselor and research supervisor. Cronbach's alpha reliability through 0.94 is derived .

Data Analysis

Descriptive method used show frequency, mean, standard deviant, maximum, minimum were used to analysis the data .

The results of age, six, marital status, job title, education, experience, employment were shown in the form of pie chart, bar chart, and histogram.

The following test were used to analysis data: freedman-test, Kolmogorov Smirnov -test, Mann-Whitney- U test, levene -test, and t-test,

Variables

The variables of this study include training pillars of aims, principals, approach \ structure and organs\ teacher's \ trainees\ content and method\ evaluation \ time and place of courses\ effective learning factors\ technology and environment .

RESULTS

Data analysis: 1. How is the training situation (attitude, systems) in FJRC and meets what kind of needs?

Freed-man test was used to contrast the importance of every training pillar in FJRC. Regarding the resulted values, there are significant meaningful differences among the training pillars. So the training pillars could be classified among the FJRC personnel. The participants give the most point to training technology (5.85). The second place goes to content and method (5.26). The third place is for effective learning factors (5.24). The fourth rank goes to teachers (5.08). The fifth rank is the place of time and place of the courses (5.02). The sixth place is for learners (4.93).the pillar of aims, principals and approach is on the seventh rank (4.80). Structure and organs (4.76) is in the eighth place on finally evaluation with 4.06 points.

Table 1. The average of educational pillars

Educational pillars	Average of ranks
Aims, principals, approach	4.80
Structure and organs	4.76
teachers	5.08
Learners	4.93
Content and method	5.26
Educational technology	5.85
evaluation	4.06
time and place of the courses	5.02
Effective learning factors	5.24

1. How is the training situation (aims, principals, approach / structure and organs /teachers /trainees/ content and method/technology and environment) in FJRC and how efficient is it?

One-sample t-test was used to answer the second research question. To use t-test, first, we should indicate that every educational pillar is normal. To do this, Kolmogorov Smirnov test was used.

Table 2. educational pillars (normal or not normal)

No	Educational pillars	Number	Normal parameters		Z Kolmogorov value	Meaningful level	Result
			mean	deviation			
1	Aims, principals, approach	420	3.13	0.75	1.13	0.15	Normal
2	Structure and organs	420	3.09	2.18	2.18	0.00	not normal
3	teachers	420	3.23	0.73	1.75	0.00	not normal
4	Learners	420	3.14	0.80	1.96	0.00	not normal
5	Content and method	420	3.21	0.69	1.47	0.03	not normal
6	Educational technology	420	3.33	0.84	2.54	0.00	not normal
7	evaluation	420	2.96	0.88	2.04	0.00	not normal
8	time and place of the courses	420	3.14	0.87	1.82	0.00	not normal
9	Effective learning factors	420	3.21	0.73	1.52	0.02	not normal

According to Kolmogorov (Z) value (1.13) and significant meaningful level of 0.15, we resulted that the average of answers to educational pillar of aim, principals and approach is normal (sig >0.05) and other pillars are not normal. (Sig<0.05).

Therefore, the results show that t-test should be used for pillar of aim, principals, and approach. For other pillars, Wilcoxon (w) test should be used. W-test was used for other pillars, which are not normal.

Table 3. one-sample t-test

Result	μ-3		
There is significant meaningful level	Meaningful level	Degree of freedom	-test t
	0	419	3.621

The values of t-test (3.62) with freedom degree of 419 and meaningful level of 0.000 show that the null hypothesis would be rejected which saying that the average of responses to pillar of aim, principals, and approach is equal to medium level.

In other words, there is no deference between expecting results and achieved results. So FJRC personnel believe that achieving the indexes of pillar of aim, principals and approach is in efficient and optimum Situation. W-test was used for other pillars, which are not normal.

Table 4. Wilcoxon values for educational pillars

No	Educational pillars	Number	Median	Wilcoxon value	Meaningful level	Result
1	Aims, principals, approach	411	3.17	31295.5	0.99	Median > 3
2	Structure and organs	411	3.20	40319.5	1.00	Median > 3
3	Teachers	411	3013	35291.0	1.00	Median > 3
4	Learners	411	3022	47367.0	1.00	Median > 3
5	Content and method	411	3038	41680.5	1.00	Median > 3
6	Educational technology	411	3.00	28152.0	0.181	Median > 3
7	Evaluation	411	3.20	36443.5	1.00	Median > 3
8	Time and place of courses	411	3.20	3644305	1.00	Median > 3

The results of w-test and meaningful level show that the mean of values is more than 3. Therefore, these pillars are in optimum situation. So the null hypothesis is not rejected which saying that the results values will be more than three. Therefore, other pillars are acceptable.

2. Are there any differences between courses offered by FJRC (company courses) and courses offered by other centers (non-company courses)?

Two-sample t-test was used to answer the third question of the study. To use t-test, we should show that every educational pillar is normal. So Kolmogorov Smirnov test would be used.

Table 5. educational pillars for company courses (normal or not normal)

No	Educational pillars	Number	Normal parameters		Z Kolmogorov value	Meaningful level	Result
			Mean	Standard deviation			
1	Aims, principals, approach	301	3.20	0.80	1.27	0.08	Normal
2	Structure and organs	301	3.13	0.83	1.97	0.00	Not normal
3	teachers	301	3.26	0.75	1.44	0.03	Not normal
4	Learners	301	3.19	0.85	1.68	0.01	Not normal
5	Content and method	301	3.28	0.73	1.08	0.19	Not normal
6	Educational technology	301	3.33	0.88	1.90	0.00	Not normal
7	evaluation	301	3.06	0.90	0.00	0.01	Not normal
8	time and place of the courses	301	3.19	0.88	0.01	0.01	Not normal
9	Effective learning factors	301	3.28	0.75	0.22	0.22	Normal

Kolmogorov (z) values show that the average of responses of pillars of aim, principals ,approach \ content and method\ and effective learning factors are normal (sig >0.05) and other pillars are not normal (sig < 0.05).

Therefore, there is no significant difference between resulted values and expecting valued for pillars of aim, principals, approach \ content and method\ and effective learning factors.

For other pillars, which are not normal, the resulted values are different significantly with expecting values.

Table 6. educational pillars for non- company courses (normal or not normal)

No	Educational pillars	Number	Normal parameters		Z Kolmogorov value	Meaningful level	Result
			Mean	Standard deviation			
1	Aims, principals, approach	119	2.95	0.55	0.94	0.34	Normal
2	Structure and organs	119	2.98	0.61	1.27	0.08	Normal
3	teachers	119	3.06	0.67	1.01	0.26	Normal
4	Learners	119	3.03	0.67	1.26	0.08	Normal
5	Content and method	119	3.04	0.55	0.95	0.32	Normal
6	Educational technology	119	3.32	0.76	1.73	0.01	Not normal
7	evaluation	119	2.71	0.77	1.18	0.12	Normal
8	time and place of the courses	119	3.02	0.82	1.41	0.04	Not normal
9	Effective learning factors	119	3.04	0.62	1.06	0.21	Normal

For non-company courses, the result of Z-test and meaningful significant level show that the average responses for all educational pillars except pillars of technology\ and time and place of courses are normal (Sig > 0.05).

The Z-test values show that there is no significant difference between achieved results and expecting results of pillars of aim, principals and approach \structure and organs \ teachers \ trainees\ content and method\ and effective learning factors. For other pillars (technology \ time and place of courses) that are not normal, the results show that there is significant difference between achieved results and expecting results.

So the results of educational pillars for courses offered by company (company courses) and courses offered by other centers(non company courses) show that total average of responses to pillars of aims, principal, approach \ content and method\ and effective learning factors are normal. Therefore, two-sample t-test was used to contrast company courses and non-company courses. In addition, Mann-Whitney- U test was used for other pillars, which are not normal.

Leven-test was used to contrast the equality of responses for company courses and non-company courses. T-test was used to contrast responses of two independent groups for company courses on non-company courses.

Table 7. independent two-sample t-test

Educational pillars	Levene-test		t-test		
	F	Meaningful level	T	DF	Mutual meaningful level
Aims, principals, approach	14.58	0.00	3.74	308.25	0.00
Content and method	12.00	0.00	3.58	285.29	0.00
Effective learning factors	7.99	0.00	3.35	260.43	0.00

The value of Levene-test (F) and meaningful level (0.000) (sig<0.05) show that the null hypothesis is rejected which says that the values of educational pillars of aim, principal, approach \ content and method \ and effective learning factors are equal for both company courses and non-company courses.

Table 8. Contrasting table 7 and 6

Pillar	Courses offered by	Number	Mean	Standard deviation	Standard deviation of mean
Aims, principals, approach	Company	301	3.20	0.80	0.05
	Non-company	119	2.95	0.55	0.05
Content and method	Company	301	3.28	0.73	0.04
	Non-company	119	3.04	0.55	0.05
Effective learning factors	Company	301	3.28	0.75	0.04
	Non-company	119	3.04	0.62	0.06

The average for each of educational pillars for company courses is more than non-company courses. Mann-Whitney-U test was used because other educational pillars are not normal.

Table 9. Mann-Whitney-U test values for educational pillars

Educational pillars	U-man vitny	w-test	z-test	Mutual meaningful level	Result
Structure nad organs	15574.50	22714.50	2.10-	1.04	Sig.
Trainres	15105.00	22245.00	2.51-	0.01	Sig.
Learners	15667.50	22807.50	2.01-	0.04	Sig.
Edcucational technology	17766.00	24906.00	0.13-	0.90	Not Sig.
Evaluation	13724.00	20864.00	3.75-	0.00	Sig.
Time and place of courses	15845.50	22988.50	1.85-	0.06	Not Sig.

Mann-Whitney-U test results show that the null hypothesis is rejected which says that the average of responses for pillars of structure \ teacher's \ trainees \ evaluation for company courses and non-company courses are equal and same.

Therefore, pillars of technology, and, time and place of courses have no significant effect on productivity of personnel. But company courses and non-company courses, have significant differences regarding pillars of aim, principals, approach \ content and method \ evaluation \ structure \ teachers \ trainees \ and effective learning factors. These pillars have more values for company courses in contrast with non-company courses. Therefore, in service training courses offered by FJRC have more effect on productivity of personnel.

3. How the pivotal aims of the in service are courses in FJRC and how effective has been each training course to organizational productivity?

Linear regression was used to ...the effect of each educational pillar on pillar of effective learning factors. Regarding the value of Coefficient of determination and Coefficient of concordance ($R^2 = 0.70$) so the educational pillars only indicate 70% of changes of pillar of effective learning factors.

Table 10. regression

Model	Coefficient of concordance	Coefficient of determination R^2	Corrected Coefficient of determination	SD of Corrected Coefficient of determination
1	0.81	0.65	0.65	0.42
2	0.83	0.69	0.69	0.40
3	0.84	0.70	0.70	0.39

4	0.84	0.70	0.70	0.39
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Table 12. Variance analysis

Model	Source of changes	Total of squares	Degree of freedom	Mean of total of squares	Fisher value	Meaningful level
1	Regression	141.02	1.00	141.2	781.02	0
	Error (rests)	75.47	418.00	0.18		
	Grand total	216.49	2.00			
2	Regression	149.72	417.00	74.86	467.46	0
	Error (rests)	66.78	419.00	0.16		
	Grand total	216.49	3.00			
3	Regression	151.65	416.00	50.55	324.30	0
	Error (rests)	64.84	419.00	0.16		
	Grand total	216.49	4.00			
4	Regression	152.27	415.00	38.07	245.98	0
	Error (rests)	64.23	419.00	0.15		
	Grand total	216.49				

The value of F in variance analysis in forth model (F-245.98) with freedom degree of (4 and 415) with meaningful level of 0.00 and contrasting with a-0.05, show that the null hypothesis is rejected which saying that all educational pillars are ineffective on the pillar of effective learning factors. Therefore, all educational pillars have effect on pillar of effective learning factors.

Table 13. Coefficient of regression

Model		Regression non-standard coefficients		standard coefficients	t-test	Meaningful level
		Models of meaningful parameters	SD	β		
1	Y-intercept)fix value(	0.53	0.10		5.35	0.00
	Content and method	0.84	0.03	0.81	27.95	0.00
2	Y-intercept)fix value(	0.54	0.09		5.84	0.00
	Content and method	0.61	0.04	0.59	14.46	0.00
	Educational technology	0.24	0.03	0.30	7.37	0.00
3	Y-intercept)fix value(	0.47	0.09		4.99	0.00
	Content and method	0.53	0.05	0.51	11.38	0.00
	Educational technology	0.22	0.03	0.27	6.53	0.00
	Structure and organs	0.13	0.04	0.14	3.52	0.00
4	Y-intercept (fix value)	0.44	0.09		4.67	0.00
	Content and method	0.50	0.05	0.48	9.94	0.00
	Educational technology	0.20	0.03	0.25	5.89	0.00
	Structure and organs	0.09	0.04	0.10	2.32	0.02
	Aims, principals, approach	0.09	0.05	0.10	2.00	0.05

the results show that the regression coefficient from the fourth model, the regression coefficient of pillars of content and method, educational technology, and aims, principals, approach are significant at 0.05 and have effect on the pillar of effective learning factors.

The effect of these pillars is mutual and direct on learning. Any increase in each of these pillars leads to increase in pillar of effective learning factors and vice versa. Therefore, every educational pillar has direct effect on organizational productivity.

DISCUSSION

Organizations as an open system need to respond to changes in their surrounding environment. Equipping and preparing HR to face with changes is very important, because HR is that most important factor and pivot of organizations. Every organization with any mission should pay more time, investment to develop human variously. If an organization wants to be pioneer in economy and its business, and does not lose the completion, it should have professional, motivated, and creative work force.

There is direct relation between productivity and work force in every organization. Many organizations believe that in-service training courses are solutions to empowering personnel.

There are significant differences between views of sample population and variables such as sex, education, age. The results show that in-service training courses end to increasing of technical and cognitive skills of experts. The performance of personnel who participate in in-service courses is better than those who do not. In addition, in-service training courses facilitate the complex works among the experts. These results correspond with Yadegari's research [1].

In-service training courses lead to reformation and development of HR. also; it is the key to job satisfaction and better motivation that finally ends to better performance of personnel. Moreover, in-service training courses increase efficiency, effectiveness qualitatively and quantitatively. So the efficiency of company increases. These results correspond with Nixon's study [5].

The results show that FJRC personnel believe that there is positive and meaningful relation between in-service training courses and increasing of responsibility. This finding corresponds with the results of Naderi etc. [6]. Another finding shows that there is direct and meaningful relation between in-service training courses and choosing strategy, which corresponds with Naderi etc. study [7].

FJRC personnel believe that there is positive and meaningful relation between completion and in-service training courses. This result corresponds with Rajabian's study [3]. The results also show that there is positive and direct relation between in-service training courses and the extend of learning. This finding corresponds with Dastranj's research [7].

FJRC personnel believe that in-service training courses have effect on their proactiveness and there is positive and meaningful relation between them. In addition, the study shows that there is positive and meaningful relation between creativity and in-service training courses that correspond with Golamshahi's study [2].

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