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The effectiveness of extension training in the governorates of the northern region of Iraq for the period (2017-2022)

Muhammad Fayek Saber, Maher Saleh Suleiman and Shadia Al-Amin Abbas

Department of Agricultural Extension, College of Agriculture, Sudan University of Science and Technology, Sudan

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Corresponding Author: Muhammad Fayek Saber

Abstract

This research aims to evaluate the effectiveness of the extension training programs implemented in the governorates of the northern region of Iraq during the period (2017-2022), by identifying the level of farmers' benefit from training activities, and the extent to which it reflects on the development of their agricultural knowledge and skills. The study relied on a social survey approach using a questionnaire distributed to a sample of farmers who participated in extension training courses. The results showed that the training programs contributed to a moderate to high degree in raising farmers' knowledge about agricultural production techniques, especially in the areas of pest control, water resources management, And improve productivity. The results also showed that there were significant differences between the governorates included in the research in terms of the level of benefit, due to the difference in the level of extension infrastructure and the availability of specialized cadres. The research concluded that the weakness of field follow-up after the end of the courses, and the lack of adaptation of programs to local needs, are among the most prominent Obstacles that limit the full impact of training. The study recommended the need to intensify ongoing training programs and link them to the agricultural reality of farmers, while strengthening the role of agricultural extension workers in providing field consultations, thus contributing to achieving sustainable agricultural development in the northern region of Iraq.

Keywords: Training, effectiveness of extension training

Introduction

Human development constitutes a fundamental focus for full growth in developing and developed countries [1]. Human development represents one of the necessary pillars of development, as it is a continuous, dynamic process that aims to improve the living conditions of communities, especially rural ones [2]. Scientific and technological progress is the real gateway to development, as it is the path Optimum for building the future of nations, and this depends on employing the expertise of its people and investing their energies and human capabilities in an optimal way with the aim of finding effective solutions to the challenges that hinder the paths of development [3]. The agricultural sector is also defined as including the production, processing, promotion and distribution of This sector is agricultural products. importanceThe economies of developing countries, as it is the backbone of their economic systems, and training is defined as a systematic process that aims to bring about a positive change in individuals' knowledge, skills, and abilities [4]. Training is also a strategic investment to enhance the future performance of the workforce by expanding its capabilities to achieve higher levels of productivity Training is considered a vital element in all sectors, and is doubly important in the Iraqi agricultural sector due to the great challenges this sector faces. Therefore, developing comprehensive training programs for workers in the agricultural field, whether they are government employees, farmers, or rural leaders, represents

a top priority [6]. Effectiveness centered Training is about evaluating the extent to which the training program improves the skills, knowledge, and behaviors of trainees within the organization. This evaluation includes three basic stages: the pre-training stage, the training stage, and the post-training stage [7]. Effectiveness also reflects the efficiency of utilizing resources to achieve organization's goals, and is affected by multiple personal and organizational factors. Despite the strategic importance of training, the absence of accurate evaluation of results weakens its effectiveness. It is not possible to judge the feasibility of training programs or improve their mechanisms without an objective evaluation system based on clear scientific standards and principles [8]. The effectiveness of training is measured by the extent to which trainees benefit from the acquired experiences, and by comparing Program outcomes with costs and resources invested. Raising and improving the level of performance of agricultural extension workers depends on what they have learned in training courses, specialized technical knowledge, skills, and attitudes in their field work with farmers, as training courses are among the most important activities of agricultural extension centers to improve their professional levels. And achieving development [9]. In this context. agricultural extension relies heavily on research centers as a source of information and modern agricultural innovations that change from time to time. In light of this result, there is a need to evaluate and follow up on these changes systematically, and agricultural extension workers need

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continuous training to keep pace with the changes. And developments taking place around the world. Accordingly, agricultural extension workers should have the largest share of training programs for the purpose of increasing organizational effectiveness in agricultural extension in its various parts [10]. The results of scientific studies and research have shown that there is a time gap between the discovery of new ideas and their practical application, which indicates the presence of obstacles It prevents the spread and adoption of new technologies, which necessitates shortening the distance between the emergence of new ideas, their integration into guiding practices, and their use in solving problems. These factors highlighted the importance of training as an effective means of developing workers in the agricultural sector. Training can help farmers adopt Modern agricultural innovations are optimized, used efficiently, and then implemented agricultural development plans [11]. Hence the importance of training agricultural extension workers to enable them to play the role of mediator between scientific research centers and rural communities that benefit from agricultural extension services. This training aims to develop capabilities Knowledge of members of the rural community, and enhancing their professional expertise, although the training programs for agricultural extension workers mainly aim to bring about behavioral changes, which is what the Agricultural Extension Organization seeks to achieve. Given the size of the annual financial investments allocated to training, which represents an essential element of the input of these extension organizations, evaluating the return and effectiveness of these programs remains extremely important, and this requires a careful analysis of the impact of training spending on the extension organizations' performance, productivity, and ability for continuous development.

Research objectives

This research aimed to estimate the effectiveness of extension training in the governorates of the northern region of Iraq through the following sub-objectives:

- 1. Determine the degree of effectiveness of guidance training from the trainees' point of view in general.
- 2. Estimating the degree of effectiveness of indicative training from the trainees' point of view with regard to each aspect in terms of (training objectives, selection of trainees, training methods, training methods, training content, training environment, trainers' competence, training times).

Importance of the study

The outcomes of the study focus on the fact that training is a characteristic of modern organizations that are keen to keep pace with every change in the technological and administrative fields. Without a developed human force capable of absorbing the change towards modernity, the agricultural organization will not be able to achieve its goals. The study is the first of its kind in the northern region, which takes Taking into account the degree of effectiveness of extension training in the governorates of the northern region of Iraq for the period (2017-2022) from the point of view of the trainees. Through the study, the following will be done:

1. Providing the competent authorities with accurate

- percentages and statistics on the degree of effectiveness of extension training.
- 2. Providing specialists with the most important personal and functional factors that affect the effectiveness of training to take them into consideration.
- 3. Providing feedback by getting to know the trainees' point of view.

Study hypothesis

There is no significant difference in the overall average rating of the effectiveness of guidance training according to (for the independent variables studied)

Procedural definitions:

- **1. Training:** A systematic educational process to provide individuals with the knowledge, experience, skills and attitudes that make them fit to carry out work.
- **2. Extension training:** An educational process through which workers and farmers are provided with information, skills and attitudes related to agricultural activity.
- 3. Effectiveness of extension training: A systematic method for evaluating extension training courses after their completion, as well as for measuring the results obtained by trainees by evaluating various aspects of the training program from the trainees' point of view.

Research population and sample: Research population and Sample

The research included all (582) employees in agricultural extension in Nineveh and Kirkuk governorates (317) in Nineveh governorate and (265) in Kirkuk governorate. To determine the appropriate sample size, a 47% random sample was drawn using a size of (274) respondents.

Data collection tool: Data Collection Instrument

The data collection tool is the means used to collect data from field reality. It is of a high degree of proficiency and of great importance in social research with the aim of studying the phenomenon in all its aspects (Al-Khawaja, 2010: 231), and the questionnaire: Questionnaire is a tool for collecting data from the respondents and it is the most common data collection tool. In use, it helps to bring information about knowledge, positions, opinions, and facts (Francisco & Baggett, 2003: 532). Choosing the best means to obtain the required information is a matter that requires mastery. (Al-Agha and Al-Ustad, 2004, 103) The questionnaire is one of the tools of social research that helps ensure the objectivity of the data to a large extent. It is a simple tool that can be used easily and in a way that saves time for the researcher. The researcher (Al-Khawaja, 3010: 369), and the questionnaire is a set of various questions and inquiries that the researcher directs to the sample individuals (respondents), which are linked to each other in a way that achieves the goals that the researcher seeks.

Results and Discussion

The first objective: The level of effectiveness of extension training in the governorates of the northern region of Iraq for the period (2017-2022) from the point of view of trainees (411-538)

The level of effectiveness of extension training in the governorates of the northern region of Iraq for the period

(2017-2022) was measured from the trainees' point of view using a five-level sliding scale (excellent, very good, good, acceptable, poor). I give the symbolic values (1, 2, 3, 4, 5) respectively. Thus, the theoretical range of the scale reached

(124 - 620) degrees, according to the scale mentioned in the third chapter, and the results of the statistical analysis of the actual data, as shown in Table (1).

Table 1: Distribution of respondents according to categories of overall assessment of the effectiveness of extension training in the governorates of the northern region of Iraq for the period (2017-2022).

t	Overall rating level		Overall rating level Repetition Percentage		Average category rating
1	Low	(411-452)	68	24.8	441.22
2	Medium	(453-494) degrees	145	52.9	468.73
3	High	(495-or more) degrees	61	22.3	513.02
		the total	274	100%	SD=26.99

It is clear from Table (1) that the lowest score for the effectiveness of extension training was (411), and the highest score was (538), with an overall average of (471.76) degrees, and a standard deviation of (26.99). The range law was used to divide the respondents into three categories according to their answers on the level of effectiveness of extension training, where the highest percentage appeared. (52.9%) fell into the medium effectiveness category with an average effectiveness of (468.73) degrees, followed by (24.8%) of the respondents in the low effectiveness level category, with an average indicative training effectiveness of (441.22) degrees. As for the high indicative training effectiveness category, it came with a percentage of (22.3%) with an average indicative training effectiveness of (513.02). The above shows that the level of effectiveness of instructive training is average and tends towards low, and it may be The reason for this is that indicative training was not suitable for more than half of the respondents, because the indicative training process includes many procedures that must be carried out before announcing the training program and good preparation for it, starting with the planning process for the training process, the content of the training program and its objectives, as well as selecting trainers and trainees accordingly. It is compatible with their training needs, which is one of the most important points that must be focused on, and the suitability of the training material to the trainee's need when choosing to participate in the training program, as well as the appropriate place and conditions and choosing the appropriate training methods to present the training material, or perhaps the reason is the training's lack of interest in the training process or The trainee's choice of the subject may not be in accordance with their need for training, or the trainee may be chosen to participate in training as a requirement for practical promotion or other job demands, and thus his interest in training is weak and thus he does not care about any aspect of the training process that includes (knowledge, skills, and attitude), and this may be the real reason for this result.

The second goal: to identify the level of effectiveness of extension training in each area of the effectiveness of extension training in the governorates of the northern region of Iraq for the period (2017-2022)

First area: Training objectives

The level of effectiveness of the guidance training in the field of training objectives was measured using a five-point scale levels, thus the theoretical range reached (16-80) degrees, and the results of the statistical analysis of the actual data are as shown in Table (2).

Table 2: Distribution of respondents according to categories for the effectiveness of extension training in the field of training objectives.

t	Categories of effectiveness	Class rating level	Repetition	Percentage	Average category rating
1	Low	(47- 55) degrees	34	12.4	53.19
2	Medium	(56- 64) degrees	150	54.7	60.09
3	High	(65- 74) degrees	90	32.9	67.46
	The total		274	100%	SD=5.06

It is clear from Table (2) that the lowest score obtained by the respondents was (47) and the highest score was 73, with an average of (61.22) and a standard deviation of (5.06). The range law was used to divide the respondents into three categories, and it appeared that the highest percentage (54.7%) of the respondents fell within the medium effectiveness category, with an average effectiveness of (60.09), while The percentage of respondents in the high effectiveness category was (32.9%), with an average effectiveness of (67.46), while the percentage of respondents in the low effectiveness category was (12.4%), with an average effectiveness of (53.19). The reasons that led to more than half of the respondents being in the average category may be that the training objectives may not be appropriate to the content. The training program and the

extent of its agreement with the characteristics of the respondents and with the academic qualifications and its consistency with what the respondents want and their need for training in accordance with the set objectives, while the high percentage of the respondents' answers may indicate that the objectives are consistent with the real environment and that they are actually amenable to practical application and are consistent with their experiences Their academic qualifications, as well as their compatibility with the scientific and technological progress witnessed by the scientific movement.

The second area: selecting trainees

The level of effectiveness of extension training in the field of selecting trainees was measured using a five-level sliding

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scale, thus the theoretical range reached (14-70) degrees, and the results of the statistical analysis of the actual data

are as follows: Shown in Table (3).

Table 3: Distribution of respondents according to categories regarding the effectiveness of extension training in the field of selecting trainees.

t	Categories of effectiveness	Class rating level	Repetition	Percentage	Average category rating
1	Low	(36- 45) degrees	30	10.9	41.87
2	Medium	(46- 55) degrees	155	56.6	51.28
3	High	(56- or more) degrees	89	32.5	58.57
	The total			100%	SD=5.65

It is clear from Table (3) that the lowest score obtained by the respondents was (36) and the highest score was 67 with an average of (52.62) and a standard deviation of (5.65). The range law was used to divide the respondents into three categories, and it appeared that the highest percentage (56.6%) of the respondents fell within the medium effectiveness category with an average effectiveness of 51.28 degrees. When the percentage of respondents in the high effectiveness category reached (32.5%), with an average effectiveness score of (58.57), while the percentage of respondents in the low category for selecting trainees was low (10.9%) with an average effectiveness score of (41.47), the reasons that led to more than half of the respondents being in the medium effectiveness category may be that the selection The trainees may not meet their needs for the

training process, or it may not meet their desires and ambitions that they seek to achieve, or not taking into account the annual evaluation of the selection of trainees, in addition to the presence of factors that may have an impact on the trainees and the extent of their interest in the training process, namely the extent of desire and interest in the training program.

The third area: training methods:

The level of effectiveness of extension training in the field of training methods was measured using a five-level sliding scale, thus the theoretical range of the scale reached (14-70) degrees, and the results of the statistical analysis of the actual data are as shown in Table (4).

Table 4: Distribution of respondents according to categories for the effectiveness of extension training in the field of training methods.

t	Categories of effectiveness	Class rating level	Repetition	Percentage	Average category rating
1	Low	(39-46) degrees	36	13.1	43.61
2	Medium	(47- 54) degrees	173	63.2	50.88
3	High	(55- 63) degrees	65	23.7	57.00
	the total			100%	SD=4.50

It is clear from Table (4) that the lowest score obtained by the respondents was (39) and the highest score was (63) with an average of (51.37) and a standard deviation of (4.50). The range law was used to divide the respondents into three categories, and it appeared that the highest percentage (63.2%) of the respondents fell within the medium effectiveness category with an average effectiveness of 50.88, while The percentage of respondents in the high effectiveness category was (23.7%), with an average effectiveness of (57.0), while the percentage of respondents in the low effectiveness category was (13.1%), with an average effectiveness of (42.61). The reasons that led may be the suitability of the training methods with the content of the training program, the number of trainees, their levels and practical qualifications, as well as Its suitability with the training duration of the training programs, or it may be due to other reasons, the most important of which is the trainees' lack of understanding of the training methods, or that it is repeatedly presented in successive training processes, and this reflects negatively on the extent of the respondents' interest in the training method.

Fourth area: Training methods

The level of effectiveness of extension training in the field of training methods was measured using a five-level sliding scale, thus the theoretical range of the scale reached (12-60) degrees, and the statistical analysis of the actual data is as shown in Table (5).

Table 5: Distribution of respondents according to categories of effectiveness of extension training in the field of training methods

t	Categories of effectiveness	Class rating level	Repetition	Percentage	Average category rating
1	Low	(30- 38) degrees	22	8.0	35.00
2	Medium	(39- 47) degrees	121	44.2	42.88
3	High	(48- or more) degrees	131	47.8	51.03
	the total			100%	SD=5.68

It is clear from Table (5) that the lowest score obtained by the respondents was (30) and the highest score was (58) with an average of (48.14) and a standard deviation of (5.68). The range law was used to divide the respondents into three categories, and it appeared that the highest percentage (47.8%) of the respondents fell within the high

effectiveness category with an average effectiveness of (51.03), while The percentage of respondents in the medium effectiveness category was (44.2%), with an average effectiveness (42.88), while the percentage of respondents in the low category for selecting trainees was low (8%) with an average effectiveness (35.0). The reasons that led to this

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may be due to the modernity of the training methods and their suitability to the content of the training material, as well as the extent to whichIt is suitable for the number of trainees, and the training methods may not be attractive and attract the attention of the trainees, and are not appropriate with the level of knowledge and information of the trainees, or they may be old and worn out, and this is reflected in the lack of understanding them and the understanding of the educational material through its presentation through the

educational means.

Fifth area: training content

The level of effectiveness of extension training in the field of training content was measured using a five-level sliding scale. The theoretical range of the scale was (16-80) degrees, and the statistical analysis of the actual data was as shown in Table (6).

Table 6: Distribution of respondents according to categories of effectiveness of extension training in the field of training content.

t	Categories of effectiveness	Class rating level	Repetition	Percentage	Average category rating
1	Low	(45-54) degrees	40	14.6	52.15
2	Medium	(55- 64) degrees	150	54.7	59.41
3	High	(65- 75) degrees	84	30.7	68.80
the total			274	100%	SD=6.20

It is clear from Table (6) that the lowest score obtained by the respondents was (45) and the highest score was (65), with an average of (61.22) and a standard deviation of (6.20). The range law was used to divide the respondents into three categories, and it appeared that the highest percentage (54.7%) of the respondents fell within the medium effectiveness category, with an average effectiveness score of (59.41), while the percentage of respondents in the high effectiveness category was (30.7%), with an average effectiveness of (68.80). degree, while reaching The percentage of respondents in the low category in the field of training content (14.6%) with an average effectiveness (52.16). The reasons that led to this may be due to the suitability of the training content to the duration of the course, and the training content may not meet the

individual differences of the trainees and meet their training needs, or the lack of involvement of the trainees in developing the training content. For the course, this is reflected in the extent of the trainees' interest in understanding and assimilating the information and skills within the content of the training program, as well as the extent of the importance of the training program information for the trainees and Daraa in improving the level of trainees' performance.

Sixth area: training environment

The level of effectiveness of extension training in the field of training content was measured using a five-level sliding scale, the theoretical range of the scale (18-90) degrees, and statistical analysis of the actual data as shown in Table (7).

Table 7: Distribution of respondents according to categories of effectiveness of extension training in the field of training environment

t	Categories of effectiveness	Class rating level	Repetition	Percentage	Average category rating
1	Low	(53- 62) degrees	47	17.2	60.02
2	Medium	(63-72) degrees	173	63.1	68.17
3	High	(73 or more) degrees	54	19.7	78.54
the total			274	100%	SD=6.44

It is clear from Table (7) that the lowest score obtained by the respondents was (53) and the highest score was (84) with an average of (68.81) and a standard deviation of (6.44). The range law was used to divide the respondents into three categories, and it appeared that the highest percentage (63.1%) of the respondents fell within the medium effectiveness category with an average effectiveness score of (68.17). When the percentage of respondents in the high effectiveness category reached (19.7%), with an average effectiveness score of (78.54), while the percentage of respondents in the low category for selecting trainees was low (17.2%) with an average effectiveness score of (60.02), the reasons that led to this may lie in the availability of a healthy climate and an appropriate educational environment in terms of adaptation. Suitable according to the seasons of the year, providing the appropriate place for the trainees, and suiting the appropriate timings. All of these factors are important for the success of the training process, and the extent of missing them or some of them negatively affects the course of the training process. The promise of the training program achieving its goals that it was designed to achieve, and this is reflected in the final result of the group. The trainees, as well as the importance of providing the basic requirements for the trainees during the break period, such as food, water, etc., and that the absence of some elements of the training environment leads to adverse results and causes dissatisfaction of the trainees, and may be the reason for the result, because more than half of the respondents in the middle category expressed their opinion about the effectiveness of the training.

Seventh area: efficiency of trainers

The level of effectiveness of extension training in the field of trainers' competence was measured using a five-level sliding scale. The theoretical range of the scale reached (22-110) degrees, and statistical analysis of the actual data as shown in Table (8).

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Table 8: Distribution of respondents according to categories of effectiveness of extension training in the field of trainers' competence.

t	Categories of effectiveness	Class rating level	Repetition	Percentage	Average category rating
1	Low	(68- 79) degrees	50	18.2	76.08
2	Medium	(80 -91) degrees	97	35.4	83.84
3	High	(92- 103) degrees	127	46.4	95.2
	the total			100%	SD=8.00

It is clear from Table (8) that the lowest score obtained by the respondents was (68) and the highest score was (103), with an average score of (87.71) and a standard deviation of (8.00). The range law was used to divide the respondents into three categories, and it appeared that the highest percentage (46.4%) of the respondents fell within the high effectiveness category with an average effectiveness of (95.2). degree, while the percentage of respondents in the medium effectiveness category was (35.4%), with an average effectiveness score of (83.84), while the percentage of respondents in the low category for selecting trainers was (18.2%) with an average effectiveness score of (76.08). The reasons that led to this may be that the guidance centers responsible for planning training programs It pays attention to and improves the selection of trainers to implement the

training process, and the answers of the respondents indicate that the trainer uses a simplified and easy-to-understand language and that he can link the topics of the training material and his ability to use training methods and means appropriate to the subject of the course. This indicates that the course material is the trainer's specialty, and this increases the interaction of the trainees with the trainer and the scientific material of the training course.

Eighth area: training times

The level of effectiveness of instructive training in the field of training times was measured using a five-level sliding scale, thus the theoretical range of the scale reached (12-60) degrees, and the statistical analysis of the actual data is as shown in Table (9).

Table 9: Distribution of respondents according to categories of effectiveness of extension training in the field of training times

t	Categories of effectiveness	Class rating level	Repetition	Percentage	Average category rating
1	Low	(36- 42) degrees	42	15.3	40.33
2	Medium	(43- 49) degrees	176	64.2	45.86
3	High	(50- or more) degrees	56	40.5	52.04
the total			(36- 42) degrees	42	SD=3.99

It is clear from Table (9) that the lowest score obtained by the respondents was (36) and the highest score was (58) with an average of (46.27) and a standard deviation of (3.99). The range law was used to divide the respondents into three categories, and it appeared that the highest percentage (64.2%) of the respondents fell within the medium effectiveness category with an average effectiveness score of (45.86). When the percentage of respondents in the high effectiveness category reached (40.5%), with an average effectiveness score of (52.04), while the percentage of respondents in the low category for selecting trainees was low (15.3%) with an average effectiveness score of (40.03), the reasons may be explained that led to the answers of more than half of the respondents falling within the medium category, and this It indicates that the training times were appropriate for the training process at some times and not appropriate at other times, and this is reflected in the variation

Conclusion

- The results showed that the level of effectiveness of extension training in general is average and tends to decline. It is concluded from this that there is a deficiency and weakness in the effectiveness of extension training in the northern governorates of Iraq.
 The reasons for this may be due either to the lack of interest of the respondents in the training process, or many of the respondents were nominated without taking their opinion to participate in the training courses.
- 2. Levels of motivation for extension training vary according to fields of study, as follows: A The results

showed that the level of motivation for training in the field of training objectives was at an average level that tends to rise. This can be concluded from the lack of clarity of the training objectives for most of the respondents or the ambiguity of the training objectives' phrases and their suitability to the training content or to some of the characteristics of the respondents such as academic achievement.

- B The results showed that the selection of trainees was at an average level tending to be high. It follows from this that a large percentage of the respondents were not selected on the basis of their desire for training.
- T The results showed that the field of training methods was at an average level tending to be high. It can be concluded from this that more than half of the respondents did not see that the training methods were appropriate to the content of the training material.
- D The results showed that the training methods also had a high level of effectiveness. This indicates the interest of those in charge of the planning and implementation process in using training methods, as well as the extent to which the trainer used these methods in order to achieve the desired educational benefit from them.
- C The results showed that the guidance training in the field of selecting trainers was at a high level. We conclude from this that the guidance centers based on planning and implementing programs are more interested in the field of selecting trainers because the training process with all its aspects depends on the way the trainer delivers the content of the training material and the way of dealing with the trainees.

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- H The results showed that the field of training content was at an average level. It can be concluded from this that the training content was not understood by more than half of the respondents, and it may also not be at a level commensurate with the characteristics of some of the respondents or the lack of interest of the trainees in the training process.
- G The answers of most of the respondents regarding the field of training environment were at an average level. It is concluded that the lack of appropriate educational environment suitable for the trainees and the training process has a negative impact on the course of the training process from the trainees' point of view and the extent of their acceptance of the content of the training material.
- D The field of trainers' competence reached a high level. This indicates that the training centers are interested in selecting trainers with standards and characteristics that suit the training material and those with experience in giving training lectures.

The answers of most of the respondents in the field of training times indicated that they were at an average level. It is concluded that the training times were not very appropriate for the training process or that sufficient time was not allocated to the training program and training hours.

Recommendations

- The need for the concerned authorities to pay attention to planning and implementing training programs, starting with designing the precise training to meet these training needs of the trainees. This helps to make the training activity a purposeful and meaningful activity for the trainees, and makes it a realistic activity that saves a lot of efforts and expenses, and in order for the training to achieve its goals, It must be based on a purposeful planned activity or effort, based on practical and scientific study to uncover training needs.
- The effectiveness of defining the training process in achieving the preparation of the training program is that it is closely related to the work of the trainees and the work needs, according to a systematic analysis of their
- Continue to provide training programs that develop employees' skills and capabilities

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