

International Journal of Agricultural Management and Development (IJAMAD) Available online on: www.ijamad.iaurasht.ac.ir ISSN: 2159-5852 (Print) ISSN:2159-5860 (Online)

Effectiveness Evaluation of Rural Extension Education Programs (The Case of Sheep Breeders in Pasargad Township, Iran)

Taher Azizi-Khalkheili¹, Masoud Bijani^{2*}, Mohammad Reza Shahpasand³ and Farzad Farbod⁴

Received: 08 December 2016, Accepted: 10 April 2017

bstra

Keywords: evaluation, educational effectiveness, EEEP model, Sheep breeding, Pasargad

C ince a lot of material and human expenditure are spent for Dimplementing extension education programs for rural people, one of the most important aspects of these programs is "effectiveness evaluation" and the rate of accomplishing program objectives, as well as determining program obstacles and solving them for future plans. The purpose of this study was to evaluate the effectiveness of rural extension education programs regarding sheep breeding. To achieve this purpose, the first phase of the present study analyzed effectiveness evaluation models using documentary studies. Then, an Effectiveness Evaluation of Extension Education Programs (EEEEP) model was designed and accomplished in the form of evaluating a rural education program. The second phase used an experimental research method in one-group pretest-posttest design. A purposeful sampling method was used for selecting research sample (n=32)from sheep breeders in Pasargad Township, Fars Province, Iran. The data gathering instrument was a questionnaire whose validity and reliability were confirmed with the Lincoln and Guba assessment method. The results revealed that participants' satisfaction with the programs was higher than average in three dimensions. Also, these courses had a significant influence on the attitude and knowledge of the participants about the educated subjects. The participants' main problem was the difficulty of attending the class. Finally, based on the findings, some executive recommendations have been provided.

¹Assistant Professor of Agricultural Extension and Education, Sari Agricultural Sciences and Natural Resources University, Sari, Iran ²Assistant Professor of Agricultural Extension and Education, College of Agriculture, Tarbiat Modares University (TMU),

Tehran, Iran

³ Assistant Professor of Agricultural Extension and Education, Institute of Applied Scientific Higher Education Jihad-e Agriculture, Tehran, Iran

⁴ Member of Scientific Board, Institute of Applied Scientific Higher Education of Jihad-e Agriculture, Education Center of Fars Jihad-e Agriculture, Shiraz, Iran

^{*} Corresponding author's email: mbijani@modares.ac.ir

INTRODUCTION

Education is among the essential and crucial pillars of social activities. It is one of the most important determinants of human ability to have a better life, well-being and happiness (Norton, 2004). On the one hand, evaluation plays an important role in providing appropriate feedback to improve Extension Education Programs. It also significantly helps managers to make better decisions (Lackman et al., 1997). Evaluation is used in extension education programs to judge their merit and value (Suvedi et al., 1999). Therefore, the long-term success in most educational activities depends on their continuing evaluation (Bijani et al., 2009; Jones, 1985).

In line with the development of agriculture, education leads to better stability of operational systems (Bijani & Fallah Haghighi, 2006; Ranjbar & Karami, 2013). Extension units of agricultural organizations, in addition to short and longterm training, should always seek to evaluate their programs, because, on the one hand, the extension personnel continually needs to improve and develop their plans, and on the other hand, they should convince the authorities that their programs and efforts are valuable. This is only possible by evaluation of programs for their cost-benefit justification (Gentry-Van Laanen & Nies, 1995). Furthermore, the evaluation of extension measures is significantly important due to the variety of extension activities and audiences (Lindner & Nieto, 1998).

There are differences between evaluation concept and evaluation program practices from perspective of different authors. In this regard, Bisang and Zimmerman (2006) consider evaluation consisting of all activities which determine the value of a program. According to Shapiro (2003), evaluation refers to the comparison between the effects of projects and strategic plans agreed upon by the organization. According to Stuffelbeam (2001), evaluation is the process of identifying, collecting and providing necessary data to judge decision-making options. According to Van den Ban (1986), the evaluation of agricultural extension programs refers to a systematic collection of information about activities, features and outcomes of program to make judgment about it, improve the effectiveness, or decide for future plans.

Several evaluation models have been provided for evaluation of programs such as Taylor model (Worthen & Sanders, 1987), CIPP (Walker, 2011; Worthen & Sanders, 1987), responsive model (Patton, 1987; Payan, 1994; Shaw et al., 2006; Stake, 1975), Kirkpatrick model (Kirkpatrick & Kirkpatrick, 2007), Saunders and Cunningham model (Worthen & Sanders, 1987), Mohd Noor and Dola model (2010), effectiveness model by Robson et al. (2010), Most Significant Change/MSC model (Dart & Davies, 2003), TIER model (Kebede, 2010), difference evaluation model (Talebianpour, 2000), Return On Investment/ROI model (Phillips & Stone, 2000), evaluation model by Mohseni et al. (2004), and Owen's meta-model (Dart et al., 1998), and all have their own strengths and weaknesses. In fact, the determination of an appropriate evaluation model and its adaption to the local conditions of the program are the major challenges for most researchers.

It is difficult to measure the effectiveness of extension programs and services (Csaki & Lerman, 2000). People who evaluate the extension programs have a variety of different perspectives and infer different results from the findings. Some researchers have paid attention to the dependence of agricultural extension on research, and the combination of these two as well as a positive correlation between them and productivity in agriculture (Evenson & Jaha, 1973). Another group of studies have focused on estimating the effects of extension programs by comparing farmers who are in contact with extension agents and those without any contact (Bradfield, 1996). Some studies have also investigated the extension performance measurement through measuring the range of changes or interactions between the farmers and extension agents (Chambers, 1997).

With regard to the importance of evaluation in extension education programs and the lack of a comprehensive evaluation model for these programs, this study aimed to investigate different evaluation models, and design and implement a convenient and practical model for assessing the effectiveness of educational programs in extension units. Accordingly, by reviewing the previous evaluation models and understanding the social and economic conditions of rural communities in Iran, this study provides an evaluation model called Effectiveness Evaluation of Extension Education Programs (EEEEP). Evaluations conducted based on this model can lead to prove effectiveness or ineffectiveness of extension education programs and assist the authorities to improve these programs. EEEEP evaluation model consists of two sections.

A) Stages of implementing an evaluation program (which includes six consecutive stages): 1) determining the overall objectives of educational course, and answering the questions like 'Who is the target group of the program?', 'Is the needs assessment done correctly?', and 'Is it possible to achieve the intended objectives?'; 2) classifying the objectives into three dimensions of knowledge, attitude and skills, as well as, determining the evaluation criteria in each dimension; 3) determining the facilities and requirements for data collection including human resources, budget and other facilities; 4) determining the methods of data collection, the number of steps, the required amount of time, and the kinds of methods which are needed for data collection; 5) collecting data at different stages from the determined resources; and 6) analyzing the collected data and preparing a suitable report with respect to the people who use it. The accuracy and honesty in performing each of these evaluation stages can prove the weight and real impact of extension education programs.

B) Executive considerations of evaluation program: The evaluators should pay attention to different aspects in evaluation of education programs. To achieve a coherent framework with various aspects, six dimensions should be taken into account: 1) context or situations before the start of education program (such as learners' individual circumstances, educational and organizational measures, and available hardware facilities); this dimension can be measured by investigating program documents, using questionnaire and interviewing with educators and executives, and administrating a pretest to learner; 2) instantaneous outcome and learners' primary orientation towards the program; this dimension can be evaluated by using questionnaire to assess participants' satisfaction from aspects like course location, time, facilities, and educator; 3) measuring the subjects' learning in terms of knowledge, attitude and behavior; assessing the participants' knowledge, attitude and skills before and after the program, or using control group in measuring this dimension. Also census or sampling from the participants, regarding evaluation budget can be used; 4) the use of learning outcomes by learners in professional positions; the assessment of this dimension is harder than previous dimensions because it must be done 3-6 months after the course. Using field observation, questionnaire, and interview can be used in this dimension; 5) evaluating the long-term effects of education programs (especially in terms of costs). It is easier to assess this dimension for a program whose goal is tangible such as increasing the crop yield that a program whose goal is something like increasing life quality; and 6) the obstacles in the way of program implementation; identifying and solving these problems can be important especially for the success of next programs. To assess these problems, the viewpoints of learners, educators and executives must be investigated.

According to the dimensions included in evaluating the effectiveness of extension education programs and its stages, its schematic model can be drawn as depicted in Figure 1. In this model, the underlying conditions and also the problems and obstacles will affect the entire education process and its effectiveness. Furthermore, the evaluation should be done by considering four dimensions of instantaneous outcome and initial reactions, learning rate, the changes in behavior and job, and the evaluated impact of various stages.

MATERIALS AND METHODS

According to the research objective, this qualitative study was conducted at two stages. At the first stage, the existing effectiveness evaluation models and their features were identified by li-

brary and documentary studies, and then the model of Effectiveness Evaluation Extension Education Programs (EEEEP), which had two sections, were provided considering the strengths and weaknesses of each model. The first section included dimensions which should be taken into account by evaluators in an evaluation program; and the second section considered the stages of an evaluation program from beginning to the end as an administrative scheduling. Finally, the second stage of research was designed and implemented based on experimental research.

The one-group pretest-posttest design was applied in this research. This design included three steps (Gall et al., 2003): 1) implementation of the pre-test for the measurement of the dependent variable, 2) implementation of the experimental treatment for the participants, and 3) implementation of the post-test for re-measurement of the dependent variable. The impact of experimental treatment was determined by comparing the pre-test and post-test scores. A purposeful sampling method was used for selecting research sample (n=32) from sheep breeders in Pasargad Township, Fars Province, Iran. Most villagers are farmers in Fars Province; and the animal husbandry is very popular along with agronomy and horticulture in most cities in Fars including Pasargad due to the presence of tribes. About 65 percent of households in the township are engaged in agriculture and animal husbandry. In the 2016 census, the county's population was 35632, in 8300 families. Of these, about 4600

people are engaged in raising sheep (N=4600) (Statistical Center of Iran, 2016). Thirty two main breeders in this county were selected to attend the target course. An experimental research should have at least 15 participants in each comparison group (Gall et al., 2003).

At this stage, the data collection tool included two pretest and posttest questionnaires. One of the sections in this questionnaire had similar questions designed to measure participants' attitudes and knowledge about the education topic, and each questionnaire had a distinct part. Questions of questionnaire were designed based on the Effectiveness Evaluation of Extension Education Programs (EEEEP) model (Figure 1). The validity and reliability of questionnaires were confirmed by Lincoln and Guba's evaluation method and it was equivalent to reliability and validity in quantitative research (Golafshani, 2003; Lincoln & Guba, 1985). Based on this method, four criteria were taken into account: credibility, transferability, dependability, and conformability. The following measures were taken to achieve each mentioned criterion.

Credibility: In this regard, the research questionnaire was reviewed and approved by a panel of experts in agricultural extension and education.

Dependability: It is regularly recorded in order to gain and create confidence, study details and notes from open-ended questions as well as tips obtained from closed-ended questions.

Transferability: To ensure the transferability of research findings, three agricultural extension



Figure 1. Conceptual model of Effectiveness Evaluation of Extension Education Programs (EEEEP)

and education experts, who were not involved, were consulted about the research findings.

Conformability: To confirm the findings, all details were carefully recorded during the entire process and then they were later revised several times.

To better understand the research methodology, the process of study is provided in Figure 1.

RESULTS AND DISCUSSION

The research results include the analysis of issues such as the utility of education program, the individuals' motivation for participating in education course, encourages and learners who participate in educational programs, resources for receiving the technical-agricultural information, the satisfaction with educational course, the results and impact of educational program, and obstacles and problems.

Demographic statistics of the studied sample are presented in Table 1. According to the results, the studied samples were mostly young with an average age of about 31 years and highly educated (mean of 9.8 years). The distribution ranges of individuals' agricultural and non-agricultural land and income were also relatively high. Furthermore, most of the studied participants lived and worked in rural areas. Since this education course was related to sheep breeding, the majority of participants (69%) had jobs in animal husbandry and 22% of the studied sample had non-agricultural jobs. Most of the participants in the course (66%) had a second job; and 34% had one job. For most of the participants (56%), this course was their first experience and they had not participated in the previous educational courses.

The utility of educational course planning was measured by an index with six items (Table 2). In most studied items, the utility was above average that indicates that the respondents had relatively high satisfaction with the clarity of objectives, the location and the time of the course. However, the respondents stated that they had not undertaken any survey before the implementation of educational course, and thus

Table 1

Learners'	Individual	and	Economic	Characteristics

Learners' characteristics		Min	Max	Mean	SD
Age (years)		19	66	31.13	10.74
Educational level (years)		0	16	9.77	3.61
The agricultural experience (years)		0	25	7.75	7.09
Irrigated land (ha)		0	10	2.80	3.64
Rain fed land (ha)		0	6	0.63	1.61
Agricultural income	Million Iranian Rials	0	120	3.77	3.13
	Thousand US Dollars	0	3.72		
Non-agricultural income	Million Iranian Rials	0	100	2.92	2.96
	Thousand US Dollars	0	3.10		
Total income	Million Iranian Rials	4	120	6.31	2.30
	Thousand US Dollars	0.12	3.10		

Table 2

				_		
I Itility	of F	Educati	onal	Course	Plann	nina
Ounty	UL	_uuuuau	onai	000130	i iaiii	my

Items	Mean*	SD	Rank
To what extent are the purposes of this course clear for you?	2.88	1.00	1
To what extent is the location of educational course appropriate based	2.81	0.99	2
on your residential area?	2.71	0.86	3
How appropriate are the time and season of course?	2.64	1.01	4
How much were you satisfied with previous courses?	2.61	1.88	5
In your opinion, how much were the objectives of courses achievable?	1.81	1.30	6
How much did you give survey before holding the course? Total	2.58	0.68	

* Mean range is from 0 to 4 (0 = never, 4 = very much)

Table 3

Motivations	First priority (%)	Second priority (%)	Third priority (%)	Total answers (%)	People referring to this item (%)	General prioritization
Increase in knowledge and improvement of quantity and quality of products	46.9	9.4	1.88	34.3	75	1
Receiving loans and facilities	37.5	21.9	9.4	31.4	68.8	2
Easier access to inputs (such as fertilizer and pesticide)	3.1	0	18.8	10	21.9	3
Receiving a certificate for course completion	12.5	37.5	0	22.9	50	4
Participation for spending leisure time	0	0	3.1	1.4	3.1	5
No response	0	31.3	50			
Total	100	1090	100	100		

this issue should be taken into account by educational planners and authorities in future's educational courses.

Table 3 measures the respondents' different motivational factors for participating in an educational course. The individual motivation and reasons for participating in this educational course were examined by a closed-ended question, and the respondents selected their three priorities for attending the course from considered responses. In the first priority and the total responses, the increase in knowledge and improvement of quantity and quality in crops, and receiving loans and facilities acquired the highest ranks for individual motivation, respectively. A total of 75% of the respondents mentioned the option of "increase in knowledge and improvement of quantity and quality in crops" as one of the reasons for attending in this course; and participation for spending leisure time received

the minimum referral. According to the results in Table 3, the participants in the educational courses had various motivations for attending these courses, so that some of them sought to increase their knowledge and improve their income, and others wanted to receive some credit and agricultural inputs.

Table 4 asks the respondents to select the people or authorities who have encouraged them to participate in educational programs. The respondents selected three priorities out of four choices. According to the results, the extension agents and experts were the most important promoters for people to attend educational courses in the first priority and also the total responses. According to the responses, "friends, acquaintances and family" were the second promoter for attending educational courses. Furthermore, 80% of respondents referred to "extension agents and experts" as one of their pro-

Table 4

International Journal of Agricultural Management and Development, 7(4), 465-476, December 2017.

Promoters	First priority (%)	Second priority (%)	Third priority (%)	Total answers (%)	People referring to this case (%)	General prioritization
Change agents and extension experts	59.4	9.4	9.4	40.3	80.6	1
Friends, acquaintances and family	12.5	34.4	0	24.2	48.4	2
Council or village administrator	15.6	9.4	12.5	19.4	38.7	3
Neighbors	9.4	6.3	15.6	16.1	32.3	4
No reply	3.1	40.6	62.5			
Total	100	100	100	100		

Promoters for Learners to Participate In Educational Programs

Table 5Sources of Technical Agricultural Information

Source of information	First priority (%)	Second priority (%)	Third priority (%)	Total answers (%)	People referring to this case (%)	General prioritization
Change agents and experts	43.8	12.5	6.3	31.2	62.5	1
Neighbors and other farmers	31.3	25	0	28.1	56.2	2
Extension agents and experts	0	15.6	18.8	17.2	34.4	3
Radio and TV programs	12.5	6.3	12.5	15.6	31.2	4
Inputs and equipment sellers	12.5	0	3.1	7.8	15.6	5
Books, newspapers and the Internet	0	0	0	0	0	
No reply	0	40.6	59.4			
Total	32(100)	32(100)	32(100)	64 (100)		

moters to participate in training courses. Utilization of various sources for encouraging people to participate in educational courses can underlie their more participation. As shown in Table 4, the extension agents and experts can play important roles in this respect by making connection with farmers.

Table 5 shows the information sources used by farmers to get the technical knowledge of agriculture. The respondents selected their priorities for getting the information from six sources of information. From the total responses, their first and second priorities to get technical information were the extension agents and experts, and neighbors and other farmers, respectively. A total of 62.5 percent of respondents referred to extension agents and experts as one of their sources of information to get technical information. Accordingly, the extension agents, other farmers, radio and television programs, research centers, and input sellers were the most important sources to get technical information on agriculture and livestock breeding. This prioritization reflects the respondents' greater attention to extension agents and farmers' advice. However, other sources of information cannot be completely ignored.

The participants' satisfaction with the courses was measured according to three dimensions of satisfaction with the teacher, satisfaction with the educational method and content, satisfaction with the facilities and duration of education, each one with five items (Table 6). In the dimension of "satisfaction with teacher", the highest mean belonged to items of "teacher's skill in expressing, conveying and teaching the content ", "teacher's social behavior with learners and fostering the interest and mutual respect" and "teacher's interest and patience in answering the questions". In total, this dimension with the mean of 3.19 out of 4 indicated that the participants were fairly satisfied with the teacher.

In terms of satisfaction with educational methods and content, the highest mean belonged to items of "applicability of presented content", "understandable content", and "learners' participation in presentation of class". In general, this dimension with mean of 3 out of 4 indicated the learners' fair satisfaction with educational content and methods.

Finally, in terms of satisfaction with educational facilities and duration, the highest mean belonged to items of "appropriateness of the location of educational course", "educational equipment and facilities", "compatibility of teaching methods with educational facilities" and "satisfaction with course facilities (transportation, food, etc.)". In general, this dimension had mean of 2.92 out of 4 and indicated the least satisfaction among the other three dimensions.

In general, the respondents' satisfaction with teacher, educational methods and content, and facilities was equal to 3.19, 3.03, and 3 respectively. This indicated their high satisfaction with various aspects, especially the teachers of the educational program.

To measure the respondents' rates of learning in the courses, we assessed their attitudes and

Table 6

|--|

Dimensions	Items	Mean*	SD	Rank
Satisfaction with teacher	Teacher's interest and patience in answering the questions	3.53	0.57	1
	Teacher's social behavior with learners and fostering interest and mutual respect	3.38	0.83	2
	Skill in expressing, conveying and teaching the content by teacher	3.16	0.85	3
	Teacher's scientific knowledge and information about the educational field	2.97	0.74	4
	Motivating the learner by teacher	2.90	0.85	5
	Total satisfaction with teacher	3.19	0.56	
Satisfaction with	Understandable content	3.42	0.56	1
educational methods	Learners' participation in presentation of class	2.97	1.07	2
and content	Applicability of presented content	2.93	0.71	3
	Compatibility of teaching methods with learners' interests and abilities	2.84	0.78	4
	The use of diverse presentation methods	2.78	0.79	5
	Total satisfaction with educational content and methods	3.00	0.52	
Satisfaction with	Educational equipment and facilities	3.16	0.72	1
educational facilities	Suitability of educational place	3.09	0.82	2
and duration	Compatibility of teaching methods with educational facilities	2.90	0.69	3
	Satisfaction with course facilities (transportation, food, etc.)	2.87	0.98	4
	Schedule of course and degree of its compactness	2.56	0.80	5
	Total satisfaction with educational facilities and duration	2.92	0.48	
Total		3.03	0.42	

Mean range is from 0 to 4 (0 = never, 4 = very much).

knowledge about sheep breeding before and after the course. According to pre-course assessment of participants' attitudes, their attitudes were higher than average and favorable in all the studied items. Since most participants in this class were working in the field of animal husbandry, their previous experience probably had a positive impact on their attitudes. Participants' post-course attitudes showed a slight positive change in some studied items.

According to paired sample t-test for comparing the individuals' pre-course and post-course attitude to sheep breeding, the mean difference was significant at the error level of 5% and the people obtained a more favorable attitude to sheep breeding after the educational course (Table 7). Therefore, the course was effective in terms of attitude, and it had a positive effect on individuals' attitude to sheep breeding. Obviously, due to the limited sample and the special features of non-probability sampling in qualitative studies, this was the special result of our sample and cannot be generalized to other samples.

The individuals' knowledge about sheep breeding was measured with five open-ended questions in coordination with the course instructor. According to paired sample t-test on individuals' mean pre-course and post-course knowledge, their knowledge was 3.19 out of 5 before the course, and this was increased by 4 out of 5

Table 7

Comparison of Respondents' Mean Attitude to Sheep Breeding Before and After Educational Course

Group of subjects	Meanª	SD	t-value	p-value
Attitude before the educational course Attitude after the educational course	4.07 4.17	0.41 0.34	-2.10	0.045*
a Moon range is from 1.5				

^a Mean range is from 1-5.

472

Table 8

Pofere educational source 2.10			
Delore equivational course 3.19	1.18	-3.59	0.001
After educational course 4.00	0.98		

Comparison of Respondents' Mean Knowledge about Sheep Breeding Before and After the Educational Course

*p<0.05

Table 9

· •	Rate	of	Exposure	to	Problems	during	the	Course
-----	------	----	----------	----	----------	--------	-----	--------

Problems	Mean*	SD	Rank
To what extent was your attendance at course difficult?	1.78	1.07	1
How much did your occupational problems affect the attendance at course?	1.77	0.96	2
How much did your familial problems affect the attendance at course?	1.22	1.10	3
To what extent did the attendance at course was difficult in terms of paying the costs?	1.19	1.17	4
How much did you have problems in terms of time for attending course?	1.09	0.73	5
Total			

Mean range is from 0-4 (0 = never, 4 = very much)

after holding the course (Table 8). This difference was statistically significant at the error level of 1 percent. In other words, the course had a positive effect on individual knowledge. Obviously, due to the limited sample size and also the specific characteristics of non-probability sampling in qualitative research, this is the particular outcome of this sample and cannot be generalized to other samples.

The individuals' problems and obstacles during the educational course were measured by a fiveitem index (Table 9). According to results, the level of problems was lower than average in all studied items; and the highest mean belonged to difficulty of attending the class. Accordingly, it can be concluded that the minimization of learners' problems for participating in the extension education programs should be one of the most important objectives of educational planners.

CONCLUSION AND RECOMMENDATIONS

Undoubtedly, evaluation is one of the most important stages of educational planning and its accurate implementation provides useful information about the way of designing and implementing the education programs and provides a helpful basis for evaluating the educational

performance of educational centers. On this basis, this research was designed and conducted to identify the existing effectiveness evaluation models and suggest an applied model for measuring the effectiveness of farmers as well as applying Effectiveness Evaluation of Extension Education Programs (EEEEP) model in one executed course. According to the findings of this study, the following cases can be summarized to offer the practical suggestions.

About the educational course planning, the respondents were mostly satisfied with implemented programs. However, according to a survey on people before holding the course, the authorities had not paid special attention to individuals' need assessment for time, location, type and subject of educational classes. Obviously, the direct survey of required educational content and also the proper time and place of classes for learners will attract more people to classes and increase the efficiency of these classes. Therefore, measures should be taken to perform this need assessment periodically in different areas.

Among the studied cases, the "increase in knowledge and improvement of quality and quantity of crops", and also "receiving loans and facilities" were the individuals' most important

motivations for attending the classes. People will be attracted to extension education programs if their motives are provided. Therefore, it is necessary to inform the learners about the kinds of information, knowledge and abilities which can be achieved by attending these courses. This information should be transparent and in details, not just mentioning the titles of courses. Furthermore, those who have attended educational courses can be put in the priorities to receive the loans.

In the field of promoters who encouraged the studied samples to attend the courses, except for extension agents and experts, who were responsible for this case, the friends, acquaintances and family also played a major role. Accordingly, appropriate plans should be developed for these people as the communicational channels; and the participants or those who are in contact with agricultural extension and service centers should be asked to inform their friends and acquaintances about classes and encourage them to attend extension education courses.

Among the studied sources of technical agricultural information, except for the agricultural extension agents and experts, the neighbors and farmers' roles were also taken into consideration, and this indicates the importance of contact farmers and demonstration farms in convey of research findings. Basically, the farmers accept advice and education which lead to objective results. Therefore, there is a need for appropriate planning about the use of contact farmers as well as demonstration farms and providing the necessary facilities for them.

According to the study on participants' satisfaction with the courses in three dimensions, the individuals' satisfaction was good and higher than average in all studied cases and items. The lowest satisfaction belonged to course schedule and its compaction. This course was compact and held in only a day, so it would be better to allocate enough time for educational courses according to the volume of content in order to achieve the desired results.

The impact of course was studied on individual learning in terms of both individual attitude and knowledge. According to the results, there were significant changes in individual attitudes and knowledge on the learned subject; and these changes were more in individual knowledge than their attitude. According to one of the reasons for low effect of educational courses on individual attitude, they were also involved with educational subjects before holding the course, and had high attitudes to content in the pre-test and before the start of the class. In general, the impact of courses on individual learning can justify the continuation of these education classes in the future.

According to the results, the rate of individual exposure to problems for attending courses was not significant. Among the studied problems, the individuals' occupational problems to take part in courses were higher than other problems. The appropriate solution for these problems includes the proper time for classes in a way that people are less busy with their personal affairs, for instance in the afternoon and evening or weekends and covers the selection of appropriate place for classes as the participants do not lose much time for commuting.

ACKNOWLEDGEMENT

The authors hereby express their special gratitude to all the respondents who completed the study interviews with great patience as well as the surveyors and interviewers who did their best in terms of data collection.

REFERENCES

- Bijani, M., & Fallah Haghighi, N. (2006). Introduction on analyzing and measuring of agricultural extension productivity. Qom: Ebtekare Danesh Press (In Persian).
- Bijani, M., Malek-Mohammadi, I., & Yazdani, S. (2009). Effectiveness evaluation and productivity of agricultural extension activities in wheat package project in Shiraz and Marvadasht Counties of Fars Province. *Iranian Agricultural Extension and Education Journal*, 4 (2), 67-79 (In Persian).
- Bisang, K., & Zimmerman, W. (2006). Key concept and methods of programme evaluation and conclusions from forestry practice in Switzerland. *Forest Policy and Economic*, *8*, 502-511.

- Bradfield, D.J. (1996). Guide to extension training. FAO, Rome.
- Chambers, R. (1997). *Whose reality- counts? Putting the first last*. London: Intermediate Tecnolosv Publications.
- Csaki, C., & Lerman, Z. (2000). Structural change in the farming sectors in Central and Eastern Europe: lessons for the EU accession. Washington, D.C.: World Bank.
- Dart, J., Petheram, R. J., & Straw, W. (1998). Review of evaluation in agricultural extension. Retrieved fromhttps://rirdc.infoservices.com. au/downloads/98-136.pdf.
- Dart, J., & Davies, R. (2003). A dialogical, storybased evaluation tool: The most significant change technique. *American Journal of Evaluation, 24*(2), 137-155.
- Evenson, R. E., & Jaha, D. (1973). The contribution of the agricultural research system to agricultural production in India. *Indian Journal of Agricultural Economic*, 28(4), 212-230.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational research: An introduction.* Seven edition. Boston: Pearson Education Inc.
- Gentry-Van Laanen, P., & Nies, J. I., (1995). Evaluating extension program effectiveness: food safety education in Texas. *Journal of Extension, 33*(5). Retrieved from: https:// www.joe.org/joe/1995october/a4.php
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report, 8*(4), 597-606. Retrieved from: http://nsuworks.nova.edu/tqr/vol8/iss4/6
- Jones, R. A. (1985). *Research methods in the social and behavioral sciences*. Massachusetts: Sinauer Associates.
- Kebede, W. M. (2010). *Effectiveness of modular* training at farmers' training center: The case of Fogera district, Amhara national regional state, Ethiopia. Unpublished thesis, Department of rural development, Haramaya University.
- Kirkpatrick, D. L., & Kirkpatrick, J. D. (2007). Implementing the four levels: A practical guide for effective evaluation of training programs. San Francisco: Berrett-Koehler Publishers, Inc.
- Lackman, L., Nieto, R.D., & Gliem, R. (1997). Instrument development for low literacy audiences:

Assessing extension program personnel teaching effectiveness. *Journal of Extension*, 35(1). No page. Retrieved from https://www.joe.org/ joe/1997february/rb1.php

- Lindner, J.R., & Nieto, R.D. (1998). Total quality management and effective extension teaching. *Journal of Extension*, *36*(2). Retrieved from https://www.joe.org/joe/1998april/rb2.php
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publication.
- Mohd Noor, Kh. B., & Dola, K. (2010). A study on the impact of government initiated training towards farmers in Malasia. *European Journal* of Social Sciences, 14(2), 299-312.
- Mohseni, A., Malek-Mohammadi, I., Chizari, M., Abili, K., & Ghazi Tabatabei, M. (2004). Investigation of evaluation methods for extension programs to design an appropriate evaluation model. *Journal of Pajouhesh and Sazandegi 65*, 16-24. (In Persian).
- Norton, R. D. (2004). *Agricultural development policy: concepts and experiences*. Published by Food and Agriculture. Wiley Publication.
- Patton, M. Q. (1987). *How to use qualitative methods in evaluation*. Newbury Park, London, New Delhi: Sage Publication.
- Payan, D. A. (1994). Designing educational project and program evaluation: A practical overview based on research and experience. Boston, Dordrecht, London: Kluwer Academic Publishers.
- Phillips, J. J., & Stone, R. D. (2000). *How to measure training results*. New York: McGraw-Hill Companies.
- Ranjbar, Z., & Karami, E. (2013). The impact of extension programs on sustainability of Irrigated and rain fed wheat production systems in Kermanshah County. *Iranian Agricultural Extension and Education Journal.* 9 (1), 1-14 (In Persian).
- Robson, L., Stephenson, C., Schulte, P., Amick,
 B., Chan, S., Bielecky, A., Wang, A., Heidotting,
 T., Irvin, E., Eggerth, D., Peters, R., Clarke,
 J., Cullen, K., Boldt, L., Rotunda, C., & Grubb,
 P. (2010). A systematic review of the effectiveness of training and education for the protection of workers. Toronto: Institute for Work and Health, Cincinnati, OH: National Institute

for Occupational Safety and Health. DHHS (NIOSH) Publication No. 2010-127. Retrieved from https://www.cdc.gov/niosh/docs/2010-127/pdfs/2010-127.pdf

- Shapiro, J. (2003). Monitoring and evaluation. Retrieved fromhttp;//www.civicus.org/new/ media monitoring/20.
- Shaw, I., Greene, J. C., & Mark, M. M. (2006). *The Sage Handbook of Evaluation*. London: SAGE Publication.
- Stake, R. E. (1975). Program evaluation particularly responsive evaluation. Retrieved from www. wmich.edu.
- Statistical Center of Iran (2016). Preliminary results of the 2016 population census report. No published. (In Persian) Retrieved from https://www.amar.org.ir/english/
- Stuffelbeam, D. L. (2001). The meta evaluation imperative America. American Journal of Evaluation, 22(2), 183-209.
- Suvedi, M., Heinze, K., & Ruonavaara, D. (1999). How to conduct evaluation of extension program. Retrieved from http://www.canr.msu.edu/ evaluate.
- Talebianpour, M. J. (2000). Effectiveness evaluation of the of "Carpet Weaving" Professional -Technical courses and its influencing factors. Unpublished thesis in Agricultural Extension and Education, Shiraz University, Iran.
- Van den Ben, A. W. (1986). Extension policies, policy types, policy formulation and goals.
 In Gwyn E. Jones (ed.). Investing in rural extension: Strategies and goals (pp. 91-97).
 London: Elsevier Applied Science Publishers.
- Walker, D. A. (2011). An exploration of how disability support services are evaluated in select community colleges. Unpublished dissertation, Department of Community College Leadership, National Louis University, Chicago, Illinois.

Worthen, B. R., & Sanders, J. R. (1987). Educational

How to cite this article:

Azizi-Khalkheili, T., Bijani, M., Shahpasand, M., & Farbod, F. (2017). Effectiveness evaluation of rural extension education programs (the case of sheep breeders in Pasargad Township, Iran) . *International Journal of Agricultural Management and Development*, *7(4)*, 465-476. URL: http://ijamad.iaurasht.ac.ir/article_533129_c9eb9ec78fb3d3caf2ad090af20c3f3c.pdf



evaluation: Alternative approaches and practical guidelines. New York and London: Longman.