

Full Length Research Paper

An analysis of training needs of evaluation professionals of agricultural and extension programs in Iran

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This study aimed to understand the competences needed by agricultural and extension evaluation experts in Iran. Using a descriptive and correlational research design, a valid and reliable self-completion questionnaire was utilized for data collection from a sample of 132 out of 170 managers and professional staff involved in agricultural and extension evaluation programs. The professionals mostly preferred to participate in in-service training courses to develop their competences including situational analysis, reflective practice, project management, professional practice and systematic inquiry, respectively. Therefore, these courses can ensure their continuous professional development. However, for many interpersonal competences, they would rather do pre-service training courses.

Key words: Evaluation, training needs, agriculture, professional development, Iran.

INTRODUCTION

Today's ever-changing world faces new challenges for human resource activities (Ramlall, 2006). An obvious instant is that, due to increasing governmental demands for accountability, evaluation in educational programs has become more important (Lee et al., 2008). The context of agricultural extension has strongly changed in recent years (Vijayaragavan et al., 2005). The greatest challenge affecting the future of extension can be propounded as managing extension resources and personnel to achieve the maximum efficiency and effectiveness (Lyles and Warmbrod, 1994). Extension staff in some extension systems may lack needed professional

competencies and motivation (Swanson and Phillips, 1997). In this condition, competency-based programming and in-service training can be used to strengthen the professional skills and abilities of extension workers and specialists. Moreover, studies show that the in-service training needs of agricultural extension personnel appear to change over time (Roberts and Dyer, 2004). The main purpose of identifying the competencies is to clarify the essential behavioral standards and the specific tasks of the employees of an organization (Williams, 2003). The specification of competencies can help extension organizations define their development approaches in the context of human resources activities (Gonzales and Nelson, 2005). An increased emphasis has been on evaluation capacity building for conducting an effective evaluation in public organizations. This can lead to providing social, educational and health-related programs for communities (Naccarella et al., 2007). DeLuca et al. (2009) showed the need for further research related to

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Abbreviations: ECPE, Essential competencies for program evaluators.

the integration of evaluator reflection and strategies for enabling learning.

Effective professional development aims to promote adult learning by considering the content, process and the context of the development effort (Brandt, 1998). Extension agents and specialists need skills and competences to design, implement and evaluate extension programs (Pezeshki et al., 1994). A number of studies have identified professional competencies needed by extension personnel in various countries. However, the literature base is lacking knowledge about the in-service needs of alternatively certified agriculture teachers. Darling-Hammond (1999) found that appropriate and timely in-service education activities are essential to success and effectiveness of agricultural education teachers. Mayers and Dyer's (2004) studies showed that, according to in-service educational aims increasing time effectiveness to optimum implementation of the tasks it is essential to investigate educational needs to determine if the current program is still the best to fulfill growing and diverse roles and responsibilities. The study of Joerger (2002), which sought to identify the common and unique in-service educational needs of agricultural education teachers, showed that program design and management of professional competencies were the categories with the highest need for in-service education of teachers. Roberts and Dyer (2003) in their study reported that the in-service needs of agriculture teachers are affected by three factors such as time, teaching experience and geographic location. Pezeshki et al. (1994) contended that extension personnel in Iran do not perceive the need for many professional extension competencies to be learned at the pre-service level. In this study, an especial attention has been paid to competencies of extension agents and their training needs before and after their employment. Karbasioun and Chizari (2004) noted that human resource development has not received enough consideration in the extension system of Iran. Hence, extension personnel are not sufficiently progressive and qualified as expected by the government.

A paradigm of non-formal education, including the competencies of evaluation has been developed by the authors in this study. It was initially conceived in a diagram based on the following studies conducted by King et al. (1998), Stevahn et al. (2005), Ghore et al. (2006), Cousins and Aubry (2006) and Gussman (2005). They have worked on identifying and clarifying a set of competencies called the Essential Competencies for Program Evaluators (ECPE), which was used in this study. These can be used as the criteria for education, evaluation, training and implementation. It was served as a checklist for extension managers to evaluate their own competence and then as a guide to seek in-service

training needs and opportunities. These competencies have been categorized to six elements (systematic inquiry, project management, reflective practice, professional practice, interpersonal competence and situational analysis) and have been used as the theoretical framework of our study (Figure 1). Their descriptions and their Cronbach's alphas are presented in Table 1. According to the studies of King et al. (2001) and Ghore et al. (2006), the systematic inquiry focuses on the technical aspects of evaluation, such as design, measurement, data analysis, interpretation and sharing results. The reflective practice competencies are related to understanding one's practice and level of evaluation expertise, including an awareness of the need for professional growth. The project management shows the practical details of conducting an evaluation process from the initial stage through completion. The situational analysis emphasizes analyzing and attending to the contextual and political issues related to the evaluation. The fifth category, the professional practice competencies reflect the professional norms and values that are foundational for evaluation practice. Finally, the interpersonal competence underlines the skills needed to conduct a program evaluation.

Purpose and objectives

The main goal of this study was to examine the professional competencies needed by agricultural and extension evaluation experts of the Ministry of Jihad-e Agriculture in Iran. Objectives of the study were:

1. To describe the self-perceived pre-service needs of agricultural extension staff.
2. To describe the self-perceived in-service needs of agricultural extension staff.

MATERIALS AND METHODS

The study was conducted through a descriptive survey. The population for this study consisted of agricultural evaluation managers (called managers in this study) and the agricultural extension personnel involved in program evaluation in the Ministry of Jihad-e Agriculture of Iran (N=170). A stratified sampling technique was utilized to select the sample (n=132), which included 67 agricultural evaluation managers and 65 extension evaluation staff. The researchers developed a self-completion questionnaire as the survey instrument by adapting components from the instruments developed by King et al. (1998, 2001) and Stevahn et al. (2005) and Ghore et al. (2006).

Reliability and validity of research instrument

The face and content validities of the instrument was established using a panel of experts consisting of senior faculty members in the

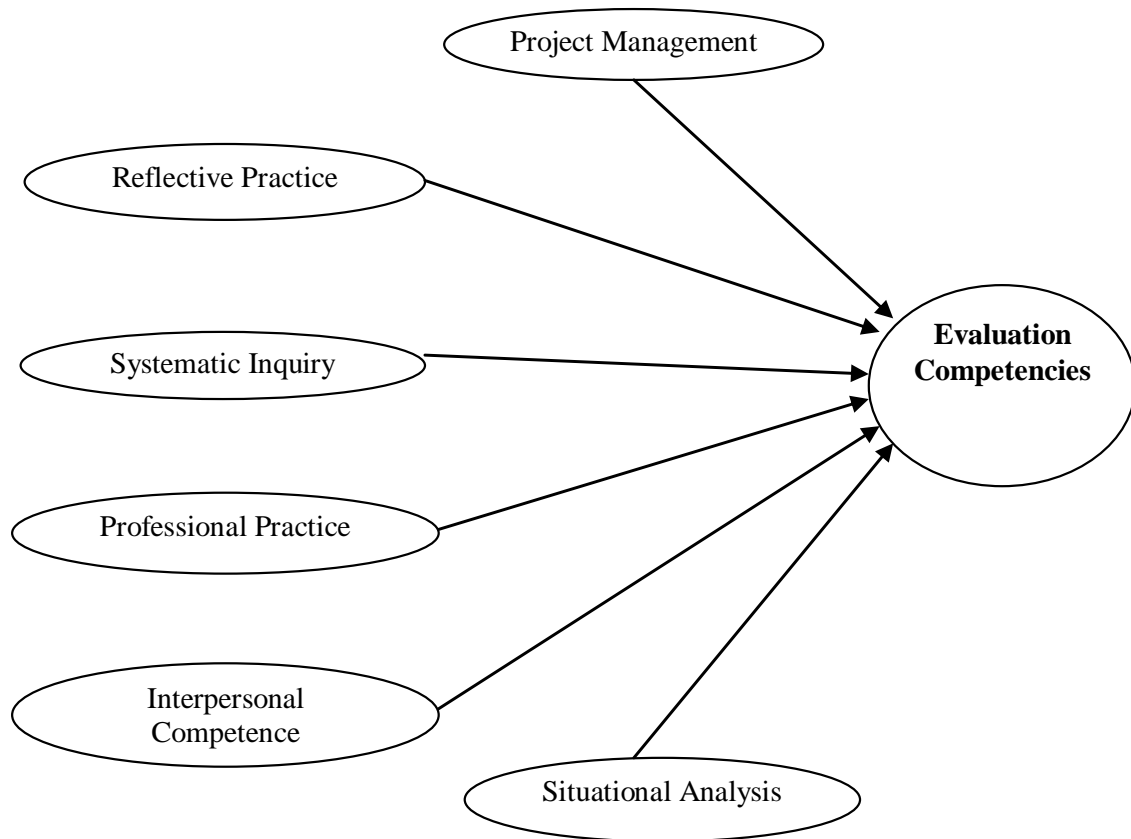


Figure 1. Theoretical framework.

Table 1. Major categories of the professional competencies for program evaluators.

Professional competency	Definition	Cronbach's alpha (%)
Professional practice	Competencies focus on the professional norms and values that are foundational for evaluation practice.	94
Systematic inquiry	Competencies focus on the technical aspects of evaluations, such as design, measurement, data analysis, interpretation.	98
Situational analysis	Competencies focus on analyzing and attending to the contextual and political issues related to the evaluation.	97
Project management	Competencies focus on the nuts and bolts of moving an evaluation from the initial stages through completion including negotiating contracts, budgeting, and conducting the evaluation in a timely manner.	94
Reflective practice	Competencies focus on understanding one's practice and level of evaluation expertise, including an awareness of the need for professional growth.	97
Interpersonal competence	Competencies focus on the people skills needed to conduct a program evaluation.	75

agricultural and extension education departments of Tarbiat Modares, Tehran and Shiraz universities. The final version of the instrument contained two sections. Section one contained 63 competencies grouped within six competency categories: professional practice, systematic inquiry, situational analysis, project management, reflective practice and interpersonal competence. The items in this section were rated in terms of being needed by extension personnel using a five-point Likert-type scale that ranged from; 1= very low value, 2=low value, 3=moderate value, 4=high value, 5=very high value. Section two of the questionnaire elicited the demographic information of the respondents (age, gender, position title, administration responsibilities, total years experience in evaluation and in the current position and the highest educational level). In order to test reliability, the instrument was pilot tested using 30 evaluation experts, who were not part of the main study. Results indicated that the instrument had an acceptable reliability. Cronbach's alpha values ranged from 0.75 (interpersonal competence) to 0.98 (systematic inquiry). Data was collected via questionnaires. Of the 140 questionnaire distributed, 40 (30/3) were returned within two weeks. Three week following the questionnaire, resulted 95 (72%) response. In all 132 (94%) survey instruments were collected. Data was analyzed using SPSS program, and descriptive statistics were used.

RESULTS

Background demographics

60% of the respondents were between 36 and 45 years of age, 18% under 35 and 22% are older. Results indicated that 72% of the respondents were male and 28% female. The education level of 42% was at a master degree, 56% held an undergraduate degree, and 2% had PhD degree. Moreover, 63% reported to have at least 6 years evaluation experience. Their degrees consisted of various educational fields including agricultural extension and education, other agricultural subjects, and varied fields related to social sciences. Over half of the respondents had participated in 1 to 6 training courses for developing their evaluation professional career. The others (44%) had more opportunity to participate in these courses. The respondents' workplace was related to two administration of the Iranian Ministry of Jihad-e-Agriculture. The first group included 67 agricultural program evaluation staff and managers of the monitoring and evaluation directorate in the ministry, who were responsible for managing the evaluation of all agricultural programs in different departments and different geographical levels of the country. The second group comprised 65 evaluation staff of the extension and farming systems deputy of the ministry, who were only in charge of evaluating agricultural extension programs at different geographical levels.

Training needs of extension managers in evaluation skills and practices

The extension managers were asked to indicate the

extent of training needs against different areas in which they need improvements. Table 1 shows that 50 to 78% of the respondents mentioned that they need to receive an in- service training course in a subject related to professional practices. The most important areas of training needs identified in terms of a self assessment measure were "considering general and public welfare in evaluation practice" and "Conveying personal evaluation approaches and skills to potential clients" and "Respecting clients, respondents, program participants and other stakeholders". Only 22 to 50% of the respondents reported that they needed a pre-service training course in these subjects. The highest ranked "systematic Inquiry" competencies needed by the respondents to receive in-service training courses were as follows (Table 2) "conducting meta-evaluations" (85%), "developing recommendations" (75%), "analyzing and interpreting data" (73%), "being knowledgeable about quantitative methods" (68.9%), "conducting literature review" (63.2%), "collecting data" and "developing evaluation design" (62.2%), respectively. The areas needed to be provided by pre-service courses were mostly "Being knowledgeable about qualitative methods" (64.9%), "making judgments" (63.2%) and "assessing validity of data" (60.4%). Table 3 shows that over three fourths of the respondents selected all the situational analysis competencies to be provided through in- service trainings.

The highest ranked situational analysis competencies needed by the respondents to be received through in-service training courses were as follows: "addressing conflicts (91%), "modifying the study as needed" (90%), "respecting the uniqueness of the evaluation site and client" (84%), "describing the program" (78.5%), "Analyzing the political considerations relevant to the evaluation" (77.7%), "Remaining open to input from others" (76.7%), "Determining program evaluability" (74.8%), and "Serving the information needs of intended users" (74.8%). Only a few or some of the respondents selected pre-service training courses to address their "situational analysis competencies" needs. Over 60% of the respondents reported that they need to learn all the areas of reflective practice competencies through in service training courses (Table 4). Three highest ranked reflective practice competencies needed by the respondents to be received through in- service training According to Table 5 courses were: "Pursuing professional development in relevant content areas" (78.8%), "Building professional relationships to enhance evaluation practice" (77.8%) and "Reflecting on personal evaluation practice (competencies and areas for growth)" (73.7%). Table 6 shows that the respondents mostly chose pre-service training for the areas of interpersonal competence, but majority preferred in-service training for improving competencies such as "Using conflict resolution skills

Table 2. Training needs of agricultural and extension experts on professional practice competence areas (Percentage).

Area of professional practice	Best time for development		Rank
	Pre-service	In- service	
Applying professional evaluation standards	50.5	49.5	1
Acting ethically and striving for integrity and honesty in conducting evaluations	37.9	62.1	2
Conveying personal evaluation approaches and skills to potential clients	28.2	71.8	3
Respecting clients, respondents, program participants, and other stakeholders	33.7	66.3	4
Considering the general and public welfare in evaluation practice	22.3	77.7	5
Mean	34.52	65.48	

Source: Findings of the study.

Table 3. Training needs of agricultural and extension experts on systematic inquiry competence areas (percent).

Areas of systematic inquiry	Best time for development		Rank
	Pre-service	In-service	
Understanding the knowledge base of evaluation (terms, concepts, theories, assumptions)	41.5	58.5	1
Developing recommendations	24.7	75.2	2
Being knowledgeable about qualitative methods	64.9	35.1	3
Being knowledgeable about mixed methods	47.7	52.3	4
Conducting literature reviews	36.8	63.2	5
Specifying program theory	42.7	57.3	6
Framing evaluation questions	42.5	57.5	7
Developing evaluation design	37.7	62.2	8
Interpreting data	27.1	72.8	9
Collecting data	37.7	62.3	10
Assessing validity of data	60.4	39.6	11
Assessing reliability of data	43.6	56.4	12
Analyzing data	27.1	72.8	13
Identifying data sources	53.8	46.2	14
Making judgments	63.2	30.2	15
Being knowledgeable about quantitative methods	31.1	68.9	16
Providing rationales for decisions throughout the evaluation	44.2	55.8	17
Reporting evaluation procedures and results	38.8	61.2	18
Noting strengths and limitations of the evaluation	46.6	53.4	19
Conducting meta-evaluations	14.8	85.1	20
Mean	41.3	58.6	

Source: Findings of the study.

(67.3%), “Facilitating constructive interpersonal interaction” (57.3%), and “Demonstrating cross-cultural competence” (55.8%). According to Table 7, the respondents mostly selected in-service training

courses as the way for improving different areas of project management competencies (60 to 76.7%). Their highest preference for in-service training were supervising others involved in conducting the evaluation

Table 4. Training needs of agricultural and extension experts on situational analysis competence areas (percent).

Area of situational analysis	Best time for development		Rank
	Pre-service	In-service	
Modifying the study as needed	9.7	90.3	1
Determining program evaluability	25.2	74.8	2
Identifying the interests of relevant stakeholders	31.1	68.9	3
Serving the information needs of intended users	25.2	74.8	4
Addressing conflicts	8.7	91.3	5
Examining the organizational context of the evaluation	33.0	67.0	6
Analyzing the political considerations relevant to the evaluation	22.3	77.7	7
Attending to issues of evaluation use	48.5	51.5	8
Attending to issues of organizational change	27.8	72.2	9
Respecting the uniqueness of the evaluation site and client	16.5	83.5	10
Remaining open to input from others	23.3	76.7	11
Describing the program	22.0	78.0	12
Mean	24.4	75.6	

Source: Findings of the study.

Table 5. Training needs of agricultural and extension experts on reflective practice competence areas (percent).

Area of reflective practice	Best time for development		Rank
	Pre-service	In-service	
Being aware of self as an evaluator (knowledge, skills, dispositions)	39.8	60.2	1
Reflecting on personal evaluation practice (competencies and areas for growth)	26.3	73.7	2
Pursuing professional development in evaluation	28.9	71.1	3
Pursuing professional development in relevant content areas	21.2	78.8	4
Building professional relationships to enhance evaluation practice	22.2	77.8	5
Mean	27.68	72.32	

Source: Findings of the study.

(77%), budgeting an evaluation (75%), using appropriate technology (73.3%), and training others involved in conducting the evaluation (72.8%).

DISCUSSION

Professional staff of an organization needs showing more effective action in today's ever-changing world than before. This in turn causes a real challenge for professional to provide effective training program (Namdar et al., 2010). In order to obtain this objective it is important to realize the best time for training. The professionals involved in agricultural and extension evaluation programs in Iran mostly prefer to participate in in-service training courses to develop their different professional

competences. This finding confirmed by Pezeshki et al. (1994). Professional competencies which experts declared needed to be trained including (1) situational analysis, (2) reflective practice, (3) project management, (4) professional practice and (5) systematic inquiry. However, for many interpersonal competences, they would rather pre-service training courses. The greatest in-service training needs by these professionals were related to the situational analysis competences.

This study suggests that most professional competencies should be provided or developed after the professional staff and managers become recruited and engaged in their job through in-service training courses. Even after providing pre-service programs, there remains a substantial need for continuing education programs in terms of the competences expressed to be needed by the

Table 6. Training needs of agricultural and extension experts on interpersonal competence areas (percent).

Area of interpersonal competence	Best time for development		Rank
	Pre-service	In-service	
Using written communication skills	69.6	30.4	1
Using verbal/listening communication skills	76.3	23.7	2
Using negotiation skills	66.0	34.0	3
Using conflict resolution skills	32.7	67.3	4
Facilitating constructive interpersonal interaction	42.5	57.5	5
Teamwork, group facilitation, processing competencies	65.4	34.6	6
Demonstrating cross-cultural competence	44.2	55.8	7
Mean	55.6	43.3	

Source: Findings of the study.

Table 7. Training needs of agricultural and extension experts on project management competence areas (percent).

Area of project management	Best time for development		Rank
	Pre-service	In-service	
Responding to requests for proposals	40.0	60.0	1
Writing formal agreements	33.0	67.0	2
Budgeting an evaluation	25.2	74.8	3
Communicating with clients throughout the evaluation process	27.2	72.8	4
Negotiating with clients before the evaluation begins	30.9	69.1	5
Justifying cost given information needs	33.0	67.0	6
Identifying needed resources for evaluation, such as information expertise, personnel, instruments	33.0	67.0	7
Using appropriate technology	26.7	73.3	8
Conducting the evaluation in a no disruptive manner	39.6	60.4	9
Training others involved in conducting the evaluation	27.2	72.8	10
Supervising others involved in conducting the evaluation	23.3	76.7	11
Presenting work in a timely manner	31.1	68.9	12
Mean	30.9	69.1	

Source: Findings of the study.

respondents. These results support the notions of Joerger (2002) and Roberts and Dyer, (2003). The implication of this research can help evaluators, researchers, trainers and decision makers to design, provide and access an effective evaluation training program in light of the framework studied. Moreover, the lesson learned from this study can be utilized in university curricula to provide and coordinate these competencies for the practitioners, trainers and evaluators. Finally, the research results can be utilized as a checklist for administrators to evaluate their competence and then as a guide to investigate in-service training opportunities.

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