Needs Assessment Competencies: Are They Important for Extension Educators?

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Abstract

The purpose of this study was to determine the importance of eleven professional competencies related to needs assessment and program development; a secondary purpose was to identify the best time these competencies should be learned. The study followed a survey research design, in which 441 randomly selected extension educators in the North Central Region of the United States responded to a questionnaire through an online survey. Results suggest that respondents perceived nine of the eleven competencies as highly important for their professional development. High percentages of the respondents also reported that six competencies should be learned on the job. Stepwise regression analysis revealed the demographics of "gender" and "education" as statistically significant predictors in determining respondents' perceptions. Findings indicate a need for flexible staff development programs for extension educators through graduate education, in-service programs, and on-the-job training. Findings have implications for designing new policies for employee selection, training, professional development, and performance appraisal. Further study was recommended to determine whether the findings would be valid at the national level.

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INTRODUCTION

In 1991, the North Central Region (NCR)-158 Committee on Adult Education in Agriculture identified four educational processes as the most important competency areas for extension educators: needs assessment and program development, learning systems, delivery systems, and evaluation systems (Martin, 1991). The National Research Agenda for Agricultural Education and Communication (2007–2010) identified these competency areas as important national research priorities for agricultural education and communication (Osborne, 2005). In 2006, the Excellence in Extension Task Force and the Work Group of the Extension Committee on Organization and Policy (ECOP) confirmed the need for these four areas to plan and implement quality educational programs in the Cooperative Extension Service.

The Cooperative Extension Service is the world's largest nonformal adult education provider, working with American communities to solve local problems and improve lives through various educational processes. As a result of changing socioeconomic and environmental conditions over the years, however, the problems faced today by rural and urban communities have become complex and specialized in nature (Morse, Brown & Warning, 2006). Therefore, the Cooperative Extension Service needs to sharpen its focus on how to succeed in today's changing environment and on how to communicate those successes to the public (Stone & Bieber, 1997)

According to Cooper and Graham (2001), success of the Cooperative Extension Service in 21st century is largely determined by technical expertise and educational process skill of extension educators. Extension educators gain subject matter training from formal degree programs, yet, these degree programs often lack training in the educational process skills and competencies needed to perform extension tasks effectively (Bennet, 1979; Cornell Cooperative Extension, 1999). Seevers, Graham, and Conklin (2007) contended that extension educators are hired mainly based on their subject matter knowledge but they often have little or no formal pre-service training or experience in the educational processes. The success of an educational program does not only depend on the quality of the content offered to clientele, but also on the competency of the extension professionals for effectively using the educational processes to plan, implement, and deliver the programs and to evaluate the learning outcomes (Birkenholz, 1999; Cornell Cooperative Extension, 1999; Rogers, 1996). Therefore, the educational process competencies are thought to determine extension educators' ability to conduct educational programs and to facilitate learning (Birkenholz, 1999; Seevers *et al.,* 2007).

Continuous professional development of extension educators is important to be effective in their jobs and be successful agents of change. Therefore, the competencies needed by extension professionals should be regularly assessed to provide meaningful staff development programs (Castetter, 1981; Radhakrishna, 2001). Competencies are the professional development goals of an organization and the process of professional development includes both formal and nonformal approaches, including graduate programs, in-service education, and on-the-job training (Baker & Villalobes, 1997; Merriam, Caffarella, & Baumgartner, 2007). Studies conducted as early as 1920 by Crosby and as recently as 2010 by Schwartz and Gibson have suggested continuous professional development of extension educators to meet their training needs.

A thorough review of the literature showed a lack of an up-to-date comprehensive assessment of the four educational process areas identified as important by the NCR–158 Committee on

Adult Education in Agriculture (Martin, 1991). While this study surveyed extension educators in the North Central Region to determine their perceived importance for professional competencies in the selected educational process areas, it is beyond the scope of this article to present and discuss the findings related to all four areas. Therefore, information regarding the needs assessment and program development is the focus of this article.

Needs assessment is widely used as a concept; however, as a process it is poorly understood and implemented in educational program development and adult learning (Brachaus, 1984). McWalter *et al.,* (1994) stated that needs assessment should not stand alone, but should be followed by program development so that identified needs can be linked to proposed educational services for potential clients. Needs assessment is a process of generating empirical and social information that is necessary for the allocation of scarce resources for program development (Monette, 1979). For the purpose of Extension program, social information is the identification of community situations and needs of clientele. In the modern age of consumerism, needs assessment consists of engaging the stakeholders in community development process (Tipping, 1998; Yoder-Wise, 1981).

In Extension, community development process encompasses people's participation in an educational activity. Therefore, Extension educational programs are essential for engaging people and transferring knowledge and skills leading to change in practice (Blewett, Keim, Leser, & Jones, 2008). Through various educational programs, extension educators involve people in learning activities designed to solve problems and meet individual and community needs (Rasmussen, 1989; Seevers *et al.,* 2007; Smith, 1934). Clients' decisions to participate in an educational activity are directly related to their

learning needs (Boone & Boone, 2005; Franz, *et al.,* 2009; Pratt & Bowmen, 2008). Therefore, determining needs of their clientele is important step for extension educators in tailoring educational programs to the needs of the communities.

Additionally, needs assessment as a professional competency is important for the other educational processes used by the extension educators. For example, the educational processes such as developing educational programs, selecting appropriate program delivery methods, creating learning environment, and evaluating learning impacts rest on the abilities of extension educators identifying precise needs of a community.

Seevers *et al.,* (2007) stated that program development plays a key role in planning educational programs because it is associated with the community's needs. They further stated that understanding community needs is challenging for extension educators because needs of a community are affected by social, historical, economical, educational, emotional, and political factors. The Food and Agriculture Organization of the United Nations stated that professional knowledge of needs assessment and community analysis greatly affects extension workers' decisions regarding appropriate program development and implementation strategies (FAO, 1979).

According to Cowley, Bergen, Young, and Kavanagh (2000), the challenge for educational institutions today is to develop the relevant competencies of their employees, who must be able to identify the purpose and type of needs assessment required, draw on the appropriate job skills, and demonstrate abilities for the implementation of appropriate educational practices and services. Views of literature mentioned in the following paragraphs provide a basis for conducting the competency studies in Extension in the area of needs assessment and program development. These views are arranged according to the competencies listed in Table 1.

In 2005, program leaders of the North Central Regional Center for Rural Development (NCR-CRD) suggested that there is an increasing need for extension professionals in this region to have knowledge, skills, and competencies in the processes, tools, and techniques to conduct needs assessment and develop educational programs. According to Birkenholz (1999), it is important for community development workers, such as extension educators, to be knowledgeable and competent in community needs identification with an understanding that educational needs assessment encompasses the learning required to achieve a desired level of knowledge or skill. Therefore, conducting thorough and accurate situational analysis and needs assessments are essential steps in defining the clients' learning needs and their related performance improvement (Sleezer, Kelsy, & Wood, 2008).

Conducting situational analysis means identifying the human, organizational, and environmental factors of a community that affect a planner's decisions for potential educational programs (Sork, 2000). These factors are connected to the program planning process and often emerge as major issues that need to be addressed by educational planners (Caffarella, 2002). Knowles (1990) contended that while developing an educational program, the essential competencies of an adult educator are his/her abilities to describe and implement the basic steps of program planning such as identifying needs/problems, determining program objectives, and involving clients in the planning process. According to Seevers *et al.,* (2007), program objectives should reflect how the participants' knowledge and skills are to be developed through the program. Therefore, objectives should target participation, knowledge gain, attitude change, skill development, change in practices, and long-term impact of the program, such as a change in participants' behavior.

Boyle (1981) stated that educational program development is based upon the philosophy of social change; therefore, involving farmer groups and advisory committees in program planning is essential to reach a precise decision about relevant needs, speed the change process, and develop leadership. Setting program priorities should help accomplish program activities, help balance the pressures of internal and external stakeholders, and prevent future problems or crises (Hernandez-Plaza, Pozo, & Alonso-Morilleno, 2004; Forest & Mulcahy, 1976).

Skill and knowledge of designing a logic model prepare extension educators to identify required inputs, program activities, and short-term and long-term goals, as well as to determine the evaluation procedures to measure program accomplishment (Millar, Simeone, & Carnevale, 2001).

Theoretical Framework

The theoretical foundation of this study is embedded in the theory of perception. Van den Ban and Hawkins (1996) defined perception as "a process by which we receive information or stimuli from our environment and transform it into physiological awareness" (p. 282). According to Coates (1998), perception is a process that involves the senses and enables individuals to arrive at true beliefs about their environment. The cognitive approach of psychology in 20th century changed psychologists' perspectives on perception emphasizing that "perception provides us with an understanding of the world" (Dijksterhuis & Bargh, 2001 p. 5). Leeper (1935) stated that people's perceptions are shaped by their experiences and trainings and form the mechanism for action. According to Shunk (2008), perception leads to learning and behavior change.

While describing the reasons for our actions, experimental social psychologists have begun to challenge that people's behaviors can be un-

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knowingly influenced by knowledge that is incidentally activated in memory during social perception. The theoretical framework for this study is based on the theory that 'social perception can automatically influence human behavior' which is based on research by Ferguson and Bargh (2004). They stated that 'social knowledge' that is automatically activated in memory during the natural course of perception shapes and guides people's impressions, judgments, feelings, intentions, and behaviors without people being aware that such influence is occurring. In Extension's case, social knowledge is the identification of current community situation and the preferred situation. The gap is need. Addressing this gap is the role of extension educators. In doing so, extension educators must compare their current competencies to the competencies required by the situation. Any lack of knowledge and skills identified as necessary for the situation indicates a need for professional development. Identification of the community needs is the basic step for extension educators for educational program development and this requires knowledge and skills in the educational processes.

As stated by Seevers *et al.,* (2007) though extension educators are technical experts they often lack educational process skills needed at the work place to be successful agent. According to the Theory of Expert Competence by Shanteau (1992), although the knowledge of domain is essential, it is not sufficient for expertise. Shanteau further stated that studies conducted by authors in various fields have reported that experts often lack skills and traits required to perform their tasks effectively. This concept was supported by Bennet (1979) who stated that although extension agents have exceptional subject matter training, they often lack skills needed to be effective professionals. Seevers *et al.,* Shanteau, and Bennet's assumptions entail the possibility that there can be gaps between

extension educators' current knowledge and the level of knowledge they required to identify clients' needs and develop educational program.

Prinz (1986) stated that perceptions always involve recognition of information and the respondent compares the information provided by the external stimuli against the information stored in a person's memory. It is obvious with this view that the process of perception does not only rely on an external stimulus factor, but also on the factors related to the perceiver's learning history. It can be inferred from this concept that there might be a relationship between extension educators' perceptions and their education, experience, and the amount of training on selected needs assessment and program development competencies included in this study.

Bem (1972) postulated the Self-Perception theory and stated that individuals come to know their own knowledge, attitudes, emotions, and preferences by inferring them from observations of their own behavior and the external circumstances in which this behavior occurs. This implies that extension educators are aware of their knowledge, skills, and abilities they use to determine community situations and needs of the clientele. This means, extension educators' notion for lack of training or experiences in educational process skills may have influence in their responses to determine the importance of needs assessment and program development competencies included in this study.

While describing meaningful perception and insight, Shunk (2008) stated that "when confronted with a problem, individuals figure out what is known and what needs to be determined, and then think about the possible solutions" (p.143). This assumption is closely linked to the theory of Objective Self-Awareness by Duval & Wicklund (1972). They stated that a person compares his/her self knowledge against a 'stan-

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dard'. Duval and Wicklund defined 'standard' as the level of skills, knowledge and attitude required by a person to perform the task correctly. According to the Gestalt consistency principle (Heider, 1960), if a person perceives discrepancies between his/her self knowledge and the standard, he/she develops an attitude to take actions to meet the standard. The attitude developed by a person to take action is the behavioral representation which is automatically activated in the memory due to perceived discrepancy of knowledge (Ferguson & Bargh, 2004).

In other words, if an extension educator perceives lack of required skills and knowledge to effectively identity clients' needs, behavioral representation is activated in his/her memory to acquire the required level of professional competency. Ferguson and Bargh (2004) stated that this behavioral representation once activated in the memory during recall of perception can guide actual behavior. This assumption is also supported by Ajzen (1985), James (1890) and Carpenter (1875). James stated that an occurrence of thought about actions leads to the performance of those actions unless the person consciously intervenes to prevent it. Ajzen stated that if people are given a sufficient degree of freedom for their choices, they are expected to carry out their behavioral representation into action when the opportunity arises (such as, in-service training and graduate education for extension educators). Carpenter stated that simply thinking about an action is sufficient to lead to the performance of that action.

King and Safrit (1998) stated that if extension educators perceive professional competencies to be unimportant, they are not likely to be motivated to become skilled in those competencies. Alternatively, if extension educators perceive a competency to be highly important, they are more likely to be motivated to be skilled in that competency. This means, if extension educators'

in this study perceived the competencies related to needs assessment and program development as important, they will more likely to participate in professional development programs offered through in-service training, graduate education, and on-the-job training. Their motivation to participate in such a program may be guided by lack of knowledge and skills, obligation to meet job responsibilities, help clients solve problems, gain social prestige, possibility for job promotion and tenure, and personal satisfaction for knowledge and career development. According to Rollins and Yoder (1993) and Hentschel, Smith and Draguns (1986), our everyday perceptions are shaped by motivational objectives, goals, cognitive development and academic preparation, employment background, experience, and level of knowledge and skills.

The Cooperative Extension Service is unique in terms of continuous professional development of its employees. Therefore, extension educators are mandated to attend regular meetings and workshops related to technological advancements in the area in which they work. Because they are attending technical update meetings, it is reasonable to expect that they need to have professional development training in the educational processes to best deliver the technical skills to their clients and communities.

PURPOSE AND OBJECTIVES

The purpose of this study was to determine the importance of the professional competencies related to needs assessment and program development as perceived by extension educators in the North Central Region of the United States; a secondary purpose was to identify when these competencies should be learned.

The specific objectives of the study were to:

1. Identify selected demographics of extension educators.

2. Determine the importance of professional

competencies related to needs assessment and program development.

3. Determine when these professional competencies should be learned.

4. Determine the amount of variance in the overall mean importance score for competencies related to needs assessment and program development as explained by the linear combination of respondents' demographics, in order to assess which combination of factors best predicts perceived importance.

MATERIALS AND METHODS
Population and selection of sample

The target population for this study was all extension educators in the North Central Region of the United States, which includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin (N= 2805). The sampling frame was the current list of extension educators found in staff directories of each state's Cooperative Extension Service website.

The guidelines provided by Ary *et al.,* (2006) were followed to determine the sample size needed for this study: using ±5 % margin of error, z value at 95% confidence level, and hypothesized population proportion, p = 0.50 (p. 419). This yielded a sample size of 384 research participants. Ary *et al.,* (2006) indicated that in social science studies, a response rate of 50% to be achievable and suggested oversampling the subjects. Baruch (1999) analyzed 175 academic studies and found a mean response rate to be 55.6%. Similarly, a pilot-study conducted to validate the instrument using the Survey-Monkey provided a responses rate of 55%; in addition 5% of the participants' email addresses were inaccessible.

Considering the response rate of the pilot-study and the suggestions provided by Ary *et al.,* (2006), the sample size was doubled. On top of that, 5% of the sample was added to compensate for inaccessible email addresses. Therefore, a total of 811 extension educators served as the sample for this study. This ensured the chances of getting at least 50% (n = 384) of the responses to confirm the results with a 95% confidence level as suggested by Ary *et al.,* A proportionate random sampling method was used to select respondents from each state of the North Central Region.

Instrumentation

The data collection instrument for this study was a closed-form questionnaire adapted from Gonzalez (1982). The instrument was divided into three sections. Section one addressed 11 professional competencies related to needs assessment and program development. These competencies were tested using two different categories. The first category was designed using a five-point Likert-type scale to measure the relative importance of stated competencies to extension educators. (1 = very low importance, 2 = low importance, 3 = moderate importance, 4 = high importance, and 5= very high importance). The second category of the scale was designed using three items to determine the best time these competencies should be learned (1 = graduate program, 2 = on the job, and 3 = in-service program).

Section two of the instrument asked the respondents to provide general comments regarding the study. The pertinent demographic information needed from the respondents such as gender, age, years of experience, and educational level was included in section three.

A panel of four experts reviewed the survey instrument for face, content, and construct validity. The panel included two state level extension leaders and two professors in Agricultural Education. Comments received from the expert panel were used to revise the questionnaire. To

determine the reliability of the instrument, a pilot study was conducted with extension educators in Iowa. The reliability coefficient (Cronbach's alpha) for the competencies was .81. According to George and Mallery (2003), Cronbach's alpha of an instrument ≥ 0.7 is appropriate to conduct a study.

Data collection

Potential respondents received a prenotice e-mail message informing them about their selection to participate in this study, confidentiality of their participation, and purpose of the study. Respondents were also informed that their participation was voluntary and that they could withdraw at any time during the study.

A week after sending the prenotice e-mail, a cover letter with a link to the online questionnaire developed in Survey-Monkey was e-mailed to participants. At the onset of the survey, participants were identified by their e-mail addresses. This e-mail address was used to identify respondents and nonrespondents (Gregg & Irani, 2004; O'Neill, 2004). Once identified, nonrespondents received additional e-mail prompts and follow-up telephone calls when needed (Dillman, 2007; Dillman, Smyth, & Christian, 2009; Ilieva, Baron, & Healey, 2002). We collected 441 usable responses for a final response rate of 55%. Early and late respondents were categorized as suggested by Ary *et al.,* (2006), and an independent samples t-test did not reveal statistically significant differences between responses of these two groups.

Data analysis

Data from the questionnaire were coded and entered into SPSS for analysis. Once the data coding process was completed, 20 responses were selected randomly and verified with the coded data to detect and correct any potential coding errors.

Frequencies and percentages were used to describe the demographic characteristics of the respondents (objective one) and to describe the choice of time for learning the professional competencies (objective three). The responses of each participant were computed to determine the mean and standard deviations for the perceived importance of each professional competency (objective two). A score was also reported as the overall mean importance of the 11 professional competencies related to needs assessment and program development. This overall mean score was further analyzed by employing stepwise regression and by utilizing the demographic characteristics as the pool of predictor variables (objective four).

FINDINGS

Objective one: Identify selected demographics of the extension educators.

Of the extension educators responding to this study, 58.3% (n = 246) were female. The mean age of the respondents was 47.85 years (SD = 10.07), ranging from a minimum age of 24 years to a maximum of 68 years. This study found that 60.0% (n = 247) of the extension educators in the North Central Region were 48 years old or older. The years of experience working as an extension professional varied from less than one year to a maximum of 42 years, with an average experience of 14.68 years (SD = 9.98). The data revealed that nearly 60.0% (n = 247) of the respondents had 8 to 28 years of work experience in Extension. The majority of the extension educators in this study (77.25%, n = 326) had master's degrees, followed by bachelor's degrees (15.15%, n = 64), and doctoral degrees (7.6%, n = 32).

Objective two: Determine the importance of professional competencies related to needs assessment and program development.

Before computing the data, respondents' ratings

of competency importance on a five-point Lik-ert-type scale were operationally defined based on the following mean scores: 1–1.49 = very low importance; 1.5–2.49 = low importance; 2.5–3.49 = moderate importance; 3.5–4.49 = high importance; and 4.5–5 = very high importance.

Based on the responses of extension educators in this study, Table 1 shows the perceived mean importance of the competencies related to needs assessment and program development. Of the eleven professional competencies, nine compe-tencies were perceived as highly important and the remaining two competencies as moderately important.

Objective three: Determine when these pro-

fessional competencies should be learned by extension educators.

Of the eleven professional competencies, six competencies were reported to be best learned on the job, four during an in-service program, and only one competency was reported to be best learned in a graduate program (Table 2).

Objective four: Determine the amount of variance in the overall mean importance score for competencies related to needs assessment and program development as explained by the linear combination of respondents' demographics, in order to assess which combination of factors best predicts perceived importance.

To determine the best predictor(s) for the

Table 1:Mean Ratings of Extension Educators' Perceptions Regarding Competencies Related to Needs Assessment and Program Development

Needs Assessment and Program Development	Perceived Importance		
Professional Competencies	*n*	**M**	**SD**
Determine program priorities	428	4.42	.59
Identify problems to be addressed	424	4.41	.64
Determine program goals	428	4.25	.64
Identify expected outcomes for the program	425	3.94	.71
Identify potential long-term impact of the program	426	3.88	.73
Identify gaps between what is and what could be	424	3.77	.73
Use an advisory committee in planning	434	3.68	.84
Develop an annual plan of work	426	3.65	.82
Prepare a long-range program of work	424	3.56	.80
Conduct situational analysis	424	3.42	.89
Design a logic model	427	3.10	.99
Overall mean importance		3.82	.76

Note. The professional competencies were rated on a Likert-type scale of 1 to 5, where 1 = very low importance, 2 = low importance, 3 = moderate importance, 4 = high importance, and 5 = very high importance.

Table 2: Extension Educators' Perceptions Regarding the Best Time to Learn Competencies Related to Needs Assessment and Program Development

Needs Assessment and Program Development	Best Time to Learn (% Response)		
Professional Competencies	*n*	Graduate program	On the job	In-service program
Determine program priorities	428	10.0	65.2	24.8
Identify problems to be addressed	424	17.5	60.2	22.3
Determine program goals	428	13.8	53.9	32.3
Identify expected outcomes for the program	425	18.1	36.1	45.8
Identify potential long-term impact of the program	426	17.5	38.9	43.6
Identify gaps between what is and what could be	424	14.7	60.7	24.6
Use an advisory committee in planning	434	11.0	49.8	39.2
Develop an annual plan of work	426	5.8	54.7	39.5
Prepare a long-range program of work	424	10.6	42.8	46.6
Conduct situational analysis	424	41.4	27.0	31.6
Design a logic model	427	35.9	9.0	55.1

Table 3: Intercorrelations of Variables Regressed on Overall Importance of Competencies Related to Needs Assessment and Program Development (n=393)

Variables	X1	X2	X3	X4	Y
		Intercorrelations			
X1	1	-.098*	-.155*	-.11*	.187*
X2		1	.013	-.036	.098*
X3			1	.583*	.012
X4				1	-.077

Note. X1 = gender, X2 = education, X3 = age, X4 = years of experience served as an extension professional, Y= overall perceived mean importance for professional competencies related to needs assessment and program development; *P < .05.

overall mean importance score from among the demographic characteristics of the respondents (i.e., gender, education, age, and years of experience), variables were included in the stepwise regression at the .05 alpha level of significance. In the regression analysis, demographics were entered as independent variables (X) and the overall mean importance score as the dependent variable (Y).

To describe relationships among variables an intercorrelation was computed (Table 3). The magnitude of the linear association between variables was determined using the following scale provided by Davis (1971): .01–.09 = negligible; .10–.29 = low; .30–.49 = moderate; .50–.69 = substantial; .70–.99 = very high; and 1.0

= perfect. The results showed that the variables "gender" and "education" had a statistically significant positive correlation with the variable "overall mean importance." There was a statistically significant negative correlation between the variables gender and education, gender and age, and gender and years of experience. Between the variables age and years of experience, a statistically significant positive correlation was found.

The collinearity statistics for all the independent variables included in the regression analysis revealed the values of the variable inflation factor < 1.02 and tolerance >.97, indicating an absence of multicollinearity among them. In addition, the residuals followed a nearly normal distribution (skewness = -.10, kurtosis = -.20).

In SPSS, the stepwise procedure automatically selects independent variables to include in the regression model based on the variable's individual contribution to the variance in the dependent variable (Cohen *et al.,* 2003). Results of the stepwise regression analysis (Table 4) show that the independent variables "gender" and "education" were statistically significant predictors, which accounted for a total of 4.9% of the variance in the dependent variable "overall mean importance". A model predicting the values of nonstandardized regression coefficients is

Table 4: Stepwise Regression of Overall Perceived Mean Importance for Needs Assessment and Program Development Competencies on Selected Demographics (n=391)

Variable	B	SE B	β	t	Tolerance	VIF
[a]Step 1						
Intercept	3.57	.07		50.36**		
[c]Gender	.16	.04	.18	3.74**	1.00	1.00
[b]Step 2						
Intercept	3.35	.11		28.35*		
Gender	.17	.04	.19	3.98**	.99	1.01
[d]Education	.10	.04	.11	2.36*	.99	1.01

Note. [a]F = 14.04 (p < .005), [b]F = 9.89 (p < .001); [c]male = 1, female = 2; [d] bachelor's degree = 1, master's degree = 2, doctoral degree = 3; [a]R^2 = .035, [b]R^2 = .049, [b]adjusted R^2 = .044; *p < .01, **p < .001.
Model prediction: $Y = 3.354 + .171X_1 + .108 X_2$
Y = predicted value for overall mean importance score for competencies related to needs assessment and program development, X1 = score for gender, X2 = score for education.

depicted in Table 4.

DISCUSSION

In this study, female extension educators responded to the survey in higher numbers than male extension educators. Seward (2002) reported that in the United States a smaller percentage of men than women are gaining the professional skills they need to be successful in the workforce. A possibility for a higher female response to this study may be that, according to Francis (2007), in the past two decades women have outnumbered men in the percentage of bachelor's and master's degrees awarded. Over the past years the Cooperative Extension Service has been encouraging its professionals to obtain higher education early in their jobs and has encouraged candidates with master's degrees to apply for extension educator positions.

The majority of respondents (77.25%) in this study had master's degrees and average work experience was nearly 15 years. The higher academic qualifications of respondents confirm the dedication of Extension's North Central Region to employees' professional development. Such efforts in human resource development are important in shaping the perceptions, attitudes, and behaviors of employees to support organizational effectiveness and to provide the best service to the clientele (Wright, McMahan, & McWilliams, 1994; Lee & Bruvold, 2003).

The higher level of educational degrees and the wide range of work experience of extension educators seem to be the essential qualities required for enhancing the level of their professional competencies. Kennedy, Howard, Jarman, and Maclean (2001) stated that people's ability to develop their professional competencies rests on the level of their education, followed by knowledge and skills in the workplace, and the level of experience. They further stated that this ability also depends on the motivation of individual professionals to learn and develop their level of competency.

The overall mean importance score of competencies (M = 3.82) indicates that respondents considered knowledge and skills related to community needs assessment as highly important for their professional development. This result is consistent with a similar study conducted in Arkansas. In 2009, a state-wide training needs assessment was conducted with all extension employees in the Arkansas Cooperative Extension Service. The study found that more than 60% of the extension professionals reported a significant need for continuing professional development in the area of "conducting a situational analysis and needs assessment" of the communities. As a result, the staff development leaders decided to (1) offer new in-service training classes related to needs assessment, and (2) modify the structure of some of the in-service training courses. This is an example of growing awareness among extension administrators of extension educators' need for the educational process competencies.

Respondents in this study preferred to learn the majority of the professional competencies on the job through day-to-day practice. One of the reasons for emphasizing on-the-job learning may be that it provides the opportunity to learn through mistakes during presentations, meetings, and the planning of educational programs. Kennedy et al. (2001) stated that learning through mistakes can often be a very effective way of improving competency and understanding. On the other hand, professionals must feel safe to acknowledge errors and shortcomings. Employers, therefore, must create an environment that enables this to happen. When adults learn through mistakes, they are ready to take such risks for their lifelong learning (Knowles, 1970).

On-the-job learning may consume considerable amounts of time and may not be suitable for

each competency development process. Weber and Antal (2003) contended that learning that requires practice is much slower than those that do not. Therefore, organizations must consider the pressure of time and encourage alternative learning methods that accelerate competency development process such as, in-service training and graduate programs.

In this study, the correlation between demographics and overall mean importance score was negligible to low. Miller (1994) argued that such a low correlation is frequent in the descriptive survey studies that are conducted in agricultural and extension education. Miller further stated that in descriptive studies, independent variables are not under the control of the researcher but are naturally occurring or self-administered by the subject of the study. Therefore, a lack of control over the independent variable weakens the predictable relationship between dependent and independent variables.

Findings revealed that there was a small yet significant difference between responses of males and females, and respondents with various educational levels; both gender and education accounted for only 4.9% of the variation in perception. Because both genders and respondents with various educational levels perceived the overall set of needs assessment and program development competencies as highly important (M = 3.5- 4.49), this study concluded that the significant difference might have been a false positive or due to a chance and that it may not have practical implications.

It is important to note that findings from this study support and add to the theoretical framework and rationale for the study. As stated by Knobloch and Martin (2000), positive perceptions promote positive attitudes and positive behaviors. Chartrand, Maddux, and Lakin (2005) stated that people's behavior is automatically influenced by their perception. Extension educators perceived the majority of the competencies surveyed in this study as being highly important. This means, with their motivation to perform the assigned job responsibilities leading to possible job promotion and tenure, it is most likely that extension educators in the North Central Region would be interested in participating in professional development programs to improve their competencies when opportunities are provided.

RECOMMENDATIONS

Findings of the study have important implications for state administrators and professional development leaders in the Cooperative Extension Service of the United States. First, the perceived high importance reported for competencies related to needs assessment and program development indicates that extension educators would respond positively to professional development programs offered on this topic.

Second, the findings provide information regarding the areas in which extension educators need to develop their professional competencies and how these educators perceive the relative importance of these competencies. This information will have implications in designing new policies for employee selection, training, professional development, performance appraisal, and succession planning.

Third, findings have implications in designing courses related to needs assessment and program development competencies at the land-grant universities and colleges of the United States for mid-career extension professionals as well as for students pursuing careers in Extension.

Fourth, findings have implications for organizational leaders in Extension to design flexible staff development programs based on the respondents perceptions that these competencies should be learned through graduate programs, in-service programs, and on-the-job training.

Finally, the findings provide guidelines for

private Extension organizations and public educational institutions to identify organizational training priorities for continued professional development of their employees related to needs assessments and program development.

The extension leaders in the U.S. North Central Region should design and implement competency development trainings related to needs assessment and program development. Based on the perceived best time to learn the majority of the competencies on the job, it is recommended that experiential learning workshops and training should be offered to extension educators to enhance their capacity for identifying the needs of their clientele. In addition, it is recommended that senior extension educators serve as mentors to their peers to offer encouragement in developing professional competencies in educational processes specifically in needs assessment and program development. The land-grant universities and colleges should revise their curricula to make sure that competencies related to needs assessment and program development are included in the course for students interested in Extension careers.

Additional questions related to extension educators' professional development needs and their perceptions were uncovered in this study. Although the stepwise regression procedure identified "education" and "gender" as the significant predictors of the respondents' perceptions, they contributed only a total of 4.9% of the variance. Therefore, it is recommended that further study be conducted to identify factors that determine extension educators' perceptions of their needs for professional development. This information will have implications for developing a work environment that would influence and motivate the extension employees to pursue professional development as a part of their continuous professional improvement and lifelong learning. Further, it will provide opportunities to develop effective educational programs in extension and meet the changing needs of clientele. Future research should replicate this study to determine whether the findings are valid at the national level. This effort will have implications for designing a national curriculum related to community needs assessment and program development as a standard for all extension educators in the United States.

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