Professional Development Needs of State Extension Specialists

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Abstract

A study was conducted to determine critical professional development needs of state extension specialists in South Carolina. Three constructs--program development and evaluation, research generation and synthesis, and communication and presentation were examined. Descriptive research methodology design was used to conduct the study. The population consisted of all 78 extension specialists employed by Clemson University. Specialists were asked to rate 35 statements relative to the three constructs, using a five-point Likert scale (1 = low to 5 = high), the importance they place on each statement and the degree to which they possessed the ability. In addition, demographic information was also gathered. Matrix analysis was used to determine critical professional development needs of specialists. Matrix analysis identified four quadrants which were labeled as 1) High level successful abilities--HLSA (high levels of importance and ability), 2) Low level success abilities--LLSA (low levels of importance and high levels of ability), 3) Low level needs--LLN (low levels of importance and ability), and 4) Critical needs--CN (high levels of importance and low levels of ability). A total of 47 specialists responded for a return rate of 60 percent. A post-hoc reliability analysis indicated that the instrument had acceptable reliability (Alpha ranged from a low of .74 to a high of .87). Descriptive statistics were used to summarize the data. Results of matrix analysis revealed three critical needs--one in program development and evaluation and two in research generation and synthesis. Critical needs identified were: 1) communicating program impact to key decision makers, 2) communicating client problems to researchers, and 3) view problems from different perspectives. In addition, 11 low level needs were also identified. Of these eleven, seven were in program development and evaluation, three in research generation and synthesis, and one in communication and presentation. Overall, extension specialists perceived themselves as possessing a high level of competence in nearly half of the professional development needs examined in this study. Three recommendations were offered based on the findings of the study. First, need for professional development training in the areas identified as critical should be given top priority. Second, training in areas identified as low level needs should be reinforced on a regular basis. Finally, a Professional Development Task Force be appointed to address critical issues relative to professional development of extension faculty and staff.

Introduction/Theoretical Framework

The linkage between extension specialists and the county agents is the bridge between people's needs and the knowledge base of the university (Boyle, 1996). Extension specialists have the responsibility to synthesize, evaluate, integrate, and apply research information and expertise from within the land-grant university system in support of county programming efforts (Taylor and Summerhill, 1994).

County extension agents and program assistants depend on specialists for information and publications (Baker and Villalobos, 1997). Specialists have expertise in locating and interpreting complex information for agents (Kawasaki, 1994). As a result, specialists are key individuals in providing the technical information that drives county extension programming (Warner and Christenson, 1984; and Prawl, Medlin, and Gross, 1984).

Several studies reveal that extension specialists are one of the primary sources of information for county agents (Radhakrishna and Thompson, 1996 and Shih & Evans, 1991). Specialists represent the most highly specialized segment of the professional staff (Baker and Vallalobos, 1997). According to Vines and Anderson (1976), approximately 44% of the total personnel in extension are specialists typically located in academic departments along with teaching and research faculty. Gibson and Hillison (1994) suggest that effective specialists must understand the extension education process. In addition, they must understand the human development, learning, and social interaction processes, and they must become knowledgeable about the organization within which they work (Gibson and Hillison, 1994 and Baker and Vallalobos, 1997).

Woeste and Stephens (1996) provide an excellent description of extension specialist's roles and responsibilities. They identify three major responsibilities--synthesis of research, leadership, and scholarship (Figure 1). Within each of the three major responsibilities, they identified several specific roles and duties for extension specialists. These include: 1) staying current with the up-to-date latest research and technologies, 2) providing leadership for development, implementation, and evaluation of new initiatives, 3) understanding concerns of clientele, 4) synthesizing and integrating research information and expertise into educational programming materials, 5) creating awareness among county faculty regarding new program initiatives, 6) providing technical subject matter assistance to county staff in the conduct of extension programs, 7) identifying funding sources to further the effectiveness of extension, 8) providing feedback to departmental faculty and program leaders on program needs, 9) encouraging the involvement and participation of other university faculty, community, and industry experts in the development and implementation of educational programs, and 10) participating in disciplinary and professional activities.

In recent years, several issues have impacted the roles and responsibilities of extension specialists. These include budget reductions, dual appointments in research and extension, personnel turnover, increased workloads, and rapidly changing expectations of a more diverse clientele (Bartholomew, 1993; Gibson and Hillison, 1994; Feller, 1984; and Djire and Newman, 1995). According to Bartholomew (1993) and Gibson and Hillison (1994), budget reductions have negatively impacted the manner in which specialists perform their roles, resulting in ambiguous responsibilities and roles and cause disagreement as to the specific jobs of staff members. Dual appointments in research and extension has increased the uncertainty surrounding the roles and responsibilities of specialists (Feller, 1984). Faculty must have a clear perception of what is expected of them in extension (Baker and Villalobos, 1997). Djire and Newman (1995) contend that extension professionals have been faced with increased workloads as they strive to effectively meet the rapidly changing expectations of a more diverse clientele.

Baker and Villalobos (1997) conducted a study to determine the professional needs of Florida extension specialists as perceived by county faculty. Three professional development

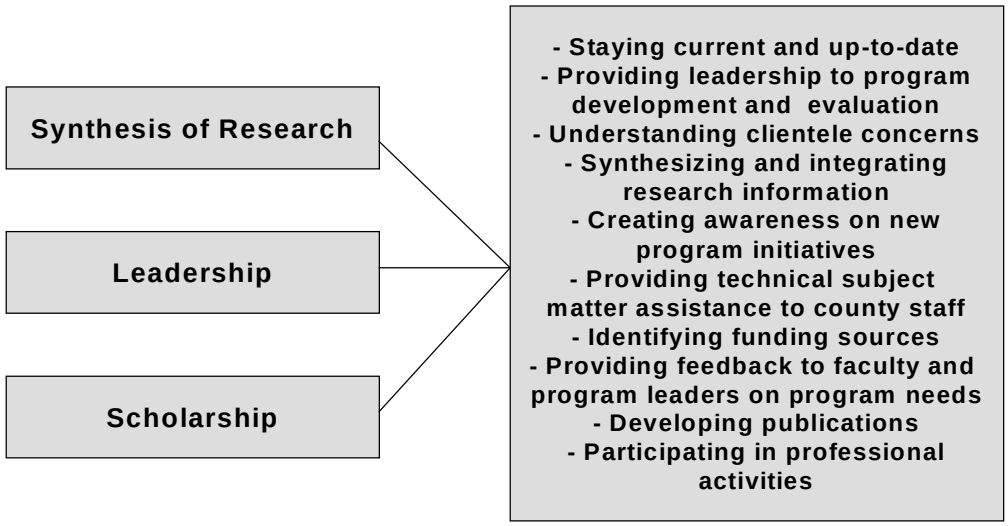

Figure 1: Extension Specialist's Roles and Responsibilities (Source: Woeste and Stephens (1996)

need constructs were examined--research generation and synthesis, program development and evaluation and communication and presentations. Findings from the study revealed six critical professional development needs for state specialists which included: 1) the ability of specialists to collaborate with county faculty in conducting demonstrations, 2) the ability to understand the needs of clientele, 3) the ability to provide appropriate educational program materials, 4) the ability to offer appropriate inservice training programs to county staff, 5) the ability to evaluate state major programs, and 6) the ability to travel to counties at state expense. Further, Baker and Villalobos concluded that personnel development involves all activities aimed at improvement and growth in an individual's ability to perform assignments effectively. As indicated by Castetter (1981) and Carroll (1989), professional development needs must be continuously assessed in order to provide meaningful staff development programs.

Purpose and Objectives

The overall purpose of this study was to identify and prioritize the professional development needs of extension specialists in the Clemson University Cooperative Extension Service. Specific objectives of the study were to:

1. describe the demographic profile of extension specialists.
2. identify and prioritize the professional development needs of extension specialists in the areas of program development and evaluation, research generation and synthesis, and communication and presentation.

Methods and Procedures

The population for this study consisted of all 78 Extension specialists employed by the Clemson University Cooperative Extension Service. The frame was obtained from the personnel office.

An instrument was developed based on a study conducted by Baker and Villalobos (1997). The instrument had four sections. Section one contained 15 statements relative to program development and evaluation. Section two contained five statements on research generation and synthesis, while section three contained 10 statements on communication and presentation. Respondents were asked to rate, using a five-point Likert scale (one being low, two being below average, three being average, four being above average, and five being high), the importance they place on each statement and the degree to which they possessed the ability. Section four contained demographic information such as gender, educational level, major area of study, primary area of responsibility and years of service in extension.

The instrument was validated for content and face validity by a panel of four experts which included the Director of Extension, two faculty members in the Department of Agricultural Education and an inservice training coordinator. A cover letter and a copy of the instrument were mailed to all the specialists in April of 1999. After the initial mailing and two follow-ups (sending another copy of the survey and electronic messages), a total of 47 specialists responded for a return rate of 60 percent. Early and late respondents were compared on variables identified in sections one through three as per procedures suggested by Miller and Smith (1983). No significant differences were found between early and late respondents. A post-hoc reliability analysis indicated that the instrument had "excellent" reliability. Alpha coefficients ranged from a low of 0.74 to a high of 0.87 with an overall of 0.93 (Table 1).

Data were analyzed using descriptive statistics such as frequencies, percentages, means, and standard deviations. Data were analyzed using the SPSS/PC+ statistical program for Windows. Matrix analysis recommended by Hershkowitz (1973) and Witkin (1984) were used to determine critical professional development needs of extension specialists. The following procedures were used. First, composite means for importance and current ability were calculated for each of the three areas--program development and evaluation, research synthesis and generation, and communications and presentations. Second, the composite means were plotted on a "X" and "Y" axis of a graph resulting in the creation of four quadrants. Third, mean importance and current abilities for each statement within each area were plotted on the graph. As a result of this procedure, the four quadrants were labeled as 1) High level successful abilities--HLSA (high levels of importance and ability), 2) Low level success abilities--LLSA (low levels of importance and high levels of ability), 3) Low level needs--LLN (low levels of importance and ability), and 4) Critical needs--CN (high levels of importance and low levels of ability).

Table 1: Cronbach's Alpha for Three Professional Development Areas

Area	No. of Cases	No. of Items	Alpha
Program Development and Evaluation	44	15	0.86
Research Generation and Synthesis	46	5	0.74
Communication and Presentation	46	10	0.87
Overall	44	30	0.93

Results

Objective 1: Demographic Profile

The demographic profile of extension specialists are shown in Table 1. A majority of the specialists were male (74%). Sixty-eight percent of the specialists reported doctorate degree as their highest education level, followed by master's degree (28%), and bachelor's (4%). Agronomy/horticulture was the primary area of program responsibility for 18 specialists (39%), 4-H youth development for six specialists (13%), family and consumer science for six specialists (11%), forestry/natural resources for six specialists (11%), dairy and animal science for four specialists (8%), community development/leadership for one specialist (2%), and other (food science, leadership and administration) for seven specialists (15%). Specialists averaged 14.07 years of extension experience, with a low of 1 year to a high of 28 years.

Objective 2: Professional Development Needs

Table 3 shows the perceived level of importance and current ability placed by extension specialists toward 15 statements on program development and evaluation. The matrix analysis resulted in categorization of one statement as a critical need (CN), and seven statements as low level needs (LLN) and seven statements as high level success abilities (HLSA). The statement, ability to communicate program impact to decision makers was identified as a critical need. The seven low level needs identified were: 1) conducting needs assessments, 2) evaluating major initiatives, 3) interacting with national industry groups, 4) interacting with international industry groups, 5) identifying funding sources for program development, 6) assisting county faculty to obtain funds and 7) developing collaborative relationships with agencies at the county level.

Table 2. Demographic Profile of Extension Specialists

Characteristic	Frequency	Percent/Mean
Gender		
Male	34	73.9
Female	12	26.1
Total	46	100.0
Education Level		
Bachelors	2	4.2
Masters	13	27.7
Doctorate	32	68.1
Total	47	100.0
Primary Area of Program Responsibility		
Agronomy/Horticulture	18	39.1
4-H Youth Development	6	13.0
Family and Consumer Science	5	10.9
Forestry/Natural Resources	5	10.9
Dairy and Animal Science	4	8.7
Community Development/Leadership	1	2.2
Other	7	15.2
Total	46	100.0
Work Experience	46	14.07 yrs.

Two critical needs emerged in the research generation and synthesis area. The ability to communicate client problems to researchers and the ability to view problems from different perspectives were identified as critical needs--CN (Table 4). In addition, the following low level need (LLN) was also identified--ability to collaborate with county staff in conducting demonstrations.

Regarding communication and presentation, the matrix analysis did not reveal any critical needs (Table 5). However, three statements were in the low level need (LLN) category and seven statements in the high level successful abilities category (HLSA).

Table 3: Means and Standard Deviations for Perceived Importance and Current Ability for Program Development and Evaluation

Statement	Importance*			Current Ability*			Need Group**
	n	Mean	SD	n	Mean	SD	
Understand needs of clients	46	4.72	0.62	46	3.93	0.99	HLSA
Deliver extension programs	46	4.63	0.85	46	4.15	0.98	HLSA
Develop strategies to solve problems	45	4.49	0.69	45	3.86	0.73	HLSA
Produce appropriate educational programming materials	46	4.48	0.72	46	4.04	0.84	HLSA
Develop appropriate inservice training to county staff	46	4.41	0.86	46	4.06	0.99	HLSA
Assist county staff in planning programs	46	4.00	0.94	46	3.87	1.08	HLSA
Interact with state-wide industry groups	46	4.26	0.88	46	3.78	1.03	HLSA
Communicate program impact to key decision makers	**46**	**4.22**	**0.96**	**46**	**3.04**	**0.89**	**CN**
Conduct needs assessment to determine program direction	46	3.98	1.02	46	3.28	1.00	LLN
Evaluate major initiatives	46	3.95	1.05	46	3.09	1.07	LLN
Interact with national industry groups	46	3.82	0.99	46	3.41	0.96	LLN
Identify funding sources for program development	46	3.78	1.11	46	3.26	1.08	LLN
Develop collaborative relationships with agencies at the county level	44	3.43	0.99	44	3.02	1.04	LLN
Interact with international industry groups	45	2.78	1.14	45	2.44	1.01	LLN
Assist county faculty in obtaining funding	46	2.76	1.14	46	2.56	1.13	LLN
Composite mean	**46**	**3.96**	**0.91**	**46**	**3.45**	**0.99**	

*Mean Importance and Ability computed on a scale: 1 ‘Low’ to 5 ‘High’
**Needs categorized by Quadrant analysis: CN=Critical Need; LLN=Low Level Need; HLSA=High Level Sustainable Ability; and LLSA=Low Level Successful Ability

Table 4: Means and Standard Deviations for Perceived Importance and Current Ability for Research Generation and Synthesis

Statement	Importance* n	Mean	SD	Current Ability* n	Mean	SD	Need** Group
Knowledge of current research findings	46	4.41	0.68	46	3.80	0.86	HLSA
Communicate client problems to researchers	**45**	**4.31**	**0.73**	**45**	**3.67**	**0.93**	**CN**
View problems from different perspectives	**46**	**4.13**	**0.83**	**46**	**3.59**	**1.00**	**CN**
Conduct applied research	46	4.06	0.99	46	3.80	1.02	HLSA
Collaborate with county staff in conducting demonstrations	46	3.76	1.04	46	3.60	0.95	LLN
Composite mean	**46**	**4.13**	**0.91**	**46**	**3.69**	**1.01**	

*Mean Importance and Ability computed on a scale: 1 'Low' to 5 'High'
**Needs categorized by Quadrant analysis: CN=Critical Need; LLN=Low Level Need; HLSA=High Level Sustainable Ability; and LLSA=Low Level Successful Ability

Table 5: Means and Standard Deviations for Perceived Importance and Current Ability for Communication and Presentation

Statement	Importance* n	Mean	SD	Current Ability* n	Mean	SD	Need** Group
Listening skills	46	4.69	0.63	46	3.96	0.89	HLSA
Communicate orally	46	4.63	0.61	46	4.39	0.77	HLSA
Demonstrate enthusiasm when delivering programs	46	4.63	0.77	46	4.22	1.00	HLSA
Respond to technical subject matter questions in a timely manner	46	4.59	0.75	46	3.98	0.88	HLSA
Communicate with county faculty via e-mail	46	4.50	0.72	46	4.30	0.86	HLSA
Communicate in writing	46	4.46	0.69	46	4.13	0.72	HLSA
Incorporate prior experiences when delivering programs	46	4.35	0.71	46	4.30	0.81	HLSA
Assist county staff to incorporate innovative teaching techniques into programs	46	3.98	0.93	46	3.63	0.93	LLN
Develop educational materials on electronic databases for county staff	45	3.93	1.16	45	3.33	1.11	LLN
Provide research summaries suitable for counties	46	3.89	0.75	46	3.48	0.94	LLN
Composite mean	**46**	**4.36**	**0.87**	**46**	**3.97**	**0.96**	

*Mean Importance and Ability computed on a scale: 1 'Low' to 5 'High'
**Needs categorized by Quadrant analysis: CN=Critical Need; LLN=Low Level Need; HLSA=High Level Sustainable Ability; and LLSA=Low Level Successful Ability

Overall, the matrix analysis yielded three critical needs (CN), eleven low level needs (LLN), one low level sustainable abilities (LLSA), and 15 high level successful abilities (HLSA).

Conclusions and Recommendations

The following conclusions and recommendations were made based on the findings of the study:

Extension specialists perceive themselves as possessing a high level of competence in nearly half of the professional development needs examined in this study. This finding confirms a high degree of importance and ability of specialists in developing and implementing extension programs. This conclusion supports previous research conducted by Baker and Villalobos (1997).

Based on the results of the quadrant analysis, three critical needs (CN) were identified. Two of the critical needs--communicating client problems to researchers and viewing problems from different perspectives--were in the research generation and synthesis area while the other--communicating program impact to key decision makers-- was in the program development and evaluation area.

Extension specialists need to step up their efforts to communicate client problems to researchers so that appropriate extension programs and/or solutions can be offered. Two aspects need emphasis in light of this finding. First, good communication between agents, specialists, and research faculty should be emphasized. Second, a communication network and/or information resource group should be developed. The recent requirement of integrating research and extension plans of work under the AREERA (Agricultural Research Education Extension Reforms Act, 1998) may further strengthen the linkage between research and extension programs and activities.

Communicating impact of extension programs to key decision makers has become increasingly important because of the emphasis placed by federal and state governments on documenting impact. Specialists need to develop skills in documenting not only program impact, but also in communicating them to their stakeholders. In future, the need for showing and communicating program impact will increase tremendously because of linking program success to funding (performance-based budgeting). Therefore, it is recommended that inservice training on how to assess and communicate program impact to stakeholders be developed and offered. Such inservice training should be based on key program areas of specialists and agents.

Extension specialists also perceived a low level need in 11 professional development topics. Many specialists have been involved in extension programming both at the county and state level. For example, specialists in this study reported an average work experience of 14 years, and as such they may have perceived a low level (LLN) need for training in these topics. A closer examination of these 11 topics reveal a need for professional development training in program evaluation, conducting needs assessments, developing educational materials suitable for electronic databases, interacting with regional, national and international industry groups, and identifying funding sources for county staff. As indicated by Witkin (1984), low level needs should be given importance and reinforced on a regular basis. It is recommended that these topics be given priority in offering future training programs for specialists.

Finally, two things need to be addressed as a result of this study. First, need for professional development training in the areas identified as critical should be given top priority. Second, the findings may also suggest justification for a closer look at re-

prioritization of specialists roles and responsibilities.

The following recommendations are offered for further study and/or administrative actions:

1. Further research should be conducted involving county faculty--county extension directors and county agents-- relative to the professional development needs of specialists. Findings of such research should help develop a comprehensive professional development program for all extension personnel.

2. It is recommended that a Professional Development Task Force be appointed to address issues relative to professional development activities. The Task Force should take into account factors such as hiring practices, staff turnover, professional experience and academic preparation of new and current employees. The establishment of such a Task Force is essential for effective development, delivery, and evaluation of extension programs.

3. It is recommended that a summary of findings be shared with extension specialists, county staff, and administrators to provide insight and direction to future inservice offerings and professional development activities.

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Professional Development Needs of State Extension Specialists

A Critique

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Professional growth continues to be one of the most important elements of career development. The author is to be commended for constructing a study focused on professional development. The literature review established the key issues involved in the professional development of Extension Specialists. The diagram helped clarify the major concerns and basis for the study.

While the study may not have resulted in anything new being revealed, the results do emphasize three areas of major concern today in land-grant universities: impact, communication of client problems and views about problems. Given public policy makers' needs for information for quality decision-making, these are contemporary needs and indicates a sense of awareness of current problems. I was surprised that the item on obtaining funding rated low in importance, especially because finding funding is becoming one of the major issues in Extension. Are these people really in touch with major issues?

There are some concerns regarding this study that deserve some mention. These concerns are identified here in the form of questions that we need to consider in the discussion of this study's results and implications.

1. This study is based on self-reported data. How much faith should we have in the data indicating what is really true? Wouldn't data from people impacted by these specialists be more convincing? One of the conclusions seems to indicate this concern.
2. Why establish a Task Force when this study has isolated 3 major concerns to be addressed and identified several high priority areas? Does this mean you don't trust the results of the study? The 3 major areas of concern represent critical needs. It seems emphasis on them would keep trainers very busy.
3. The return rate seemed low for the size of the population. Are you convinced you did enough to gain a higher return rate? Were these Extension Specialists convinced that these issues merited the time it took to respond to the survey?

Professional development is a worthy area of study. The question is who do we ask for input regarding this research area? Stakeholders and those most impacted by these professionals play a key role in improving services. While the results of this study are useful to a limited extent, the continual study of professional development skills and knowledge is required if there is to be real impact on inservice education.