FRAMEWORK TO IDENTIFY INSERVICE TRAINING NEEDSOF EXTENSION AGENTS

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Abstract

A new approach was used to identify inservice education needs of Clemson University Extension personnel. The approach used included responses from county staff and Extension specialists. First, agents were asked to identify training needs in three areas--subject matter, professional development, and technology. The training needs identified by agents were shared with Extension specialists as they prepared for their annual inservice offerings. Agent needs and inservice offerings of specialists were matched to identify gaps in training needs. Findings revealed a good match between what was needed and what will be offered. A framework was developed based on the findings.

Introduction

The Cooperative Extension Service (CES) is said to be an "agency of change" for problem solving, a catalyst for individual and group action (Rasmussen, 1989). Rasmussen stated, "Extension was invented by the American people to meet a vital educational base for making rural life profitable, healthful, comfortable, and attractive" (p. 16). The CES was established in 1914 under the Smith-Lever Act with a mission to disseminate useful and practical information in agriculture, home economics, and related subjects to improve the lives of people. The CES is in the forefront of lifelong learning and behavioral change for adult learners. From its very beginning the CES philosophy has been one of advocating positive, lifelong, individual and behavioral change.

American agriculture and lifestyles of American people have drastically changed from what they were in 1914. Extension had to adapt to the societal changes to reorient to a fundamentally industrial and service oriented population (Russell, 1995). The roles and responsibilities of Extension agents have also changed. The educational programs delivered by Extension agents today are more varied than they have ever been and will continue to change to meet the changing needs of the clientele they serve (Radhakrishna, 1998). In addition, the new technology of information gathering, exchange and processing is forcing CES into new roles and away from the traditional research-specialist-agent-farmer hierarchy that has characterized technology transfer (ES-USDA, 1988).

The future of Extension programs will be determined to a large degree by the ability of the agents to do the job and the extent to which they are up-to-date on the subject matter topics. As indicated by Prawl, Medlin, and Gross (1984), the success of educational programs in Extension, just as in teaching, depends heavily upon the abilities of individual professionals. The delivery of a high level of competence is the principle public justification for the Cooperative Extension Service (Strother, 1977). Furthermore, to constantly produce a high volume of quality work, employees must be competent, able to do the job, and be willing to put forth the effort required for the job (Mott, 1972).

Today's challenge for Extension is an expanded educational effort to effectively relate the total expertise and resources of institutions of higher education to the solutions of complex problems of individuals and the society in general (ECOP, 1987). This challenge creates a continuous need for staff development for Extension professionals. One of the most perplexing questions facing Extension staff development is what type of professional development activities do Extension professionals need? Adult learning theory emphasizes the importance of using the needs of the clientele as a basis for inservice training programs. As indicated by Lentz (1983), the purpose of identifying needs is to build a foundation for providing inservice education. Such identification will assist staff development leaders in establishing priorities and designing inservice education offerings. Barrick and Powell (1986) suggest that the strength of inservice training and the follow-up evaluation depends upon planning and planning depends on assessing needs.

Inservice training has been defined as education delivered in a structured setting that enables one to become more competent professionally, that is, to further develop technical subject matter competencies to keep abreast of and, if possible, ahead of change, and to explore educational and technological content and processes in varying depth and to extend personal competencies (National Policy Guidelines for Staff Development, 1977, and Smith, 1995).

Inservice training is used extensively by county staff in Clemson University's Cooperative Extension Service. In fiscal year 1998, there were 99 in-services conducted through the Extension Staff Development office, with over 2,083 participants. Of the 99 in-services offered, 55 were subject matter topics with 1,580 participants, 28 were professional development topics involving 296 participants and 16 were in the area of general education involving 207 participants. A majority of these in-services were held at Columbia (a central location), Regional Education Centers (RECs), and Clemson.

Studies reveal that Extension specialists/faculty are one of the primary sources of information for county agents and staff (Radhakrishna & Thomson, 1996, and Shih & Evans, 1991). Because of the critical role the specialists play as information providers, it is important that they understand the inservice needs of county agents and staff,

development of educational materials, offering inservice training, program evaluation and finally the Extension education process (Mincemoyer & Kelsey, 1999; Baker & Villalobos, 1997; and Gibson & Hillison, 1994).

The traditional approach of identifying inservice training needs has been asking Extension specialists to submit subject matter topics, location, date and time and educational resources needed to do the training. This approach has worked well in the past, but has not been able to meet the expectations of Extension agents. Agents felt that their needs of inservice training did not match with what was offered, resulting in not getting the training needed to improve their skills and be current. In addition, rapid changes in technology and information delivery systems and changing roles and responsibilities of Extension agents call for new approaches to identify and deliver inservice training programs. This study was conducted to develop a framework to identify inservice training needs of Extension agents and determine how those needs can be met.

Purpose and Objectives

The overall purpose of the study was to develop a framework to identify inservice training needs of Extension agents and county staff. Objectives of the study were to:

1. Identify inservice training needs of agents relative to subject matter topics, professional development and technology.
2. Categorize the identified training needs into Public Service and Agriculture (PSA) goals of Clemson University.
3. Match identified training needs of agents with inservice offerings proposed by specialists.
4. Based on objectives 1, 2, and 3, develop a framework that can be used to identify future inservice training needs of agents.

Methodology

In this section, a brief description of Clemson University Cooperative Extension Service and Public Service and Agriculture (PSA) activities are presented. In addition, the population used for the study, instrumentation, and data collection and analysis procedures are also discussed.

The Clemson University Extension Programs goal is to help all families, individuals and communities affected by such changes and identify ways to understand and address those changes so that it will improve the quality of life of all South Carolina citizens. The Clemson University Cooperative Extension Service Plan of Work (POW) is driven by base programs of the state and of the nationwide Cooperative Extension System. The plan includes broad parameters for program development and planning by university and county faculty. Extension advisory board and program identification committees also provide input to the POW (South Carolina Cooperative Extension System Plan of Work: 1997-2001, 1998).

The POW contains 16 initiatives, covering a wide variety of programs and topics that address the critical needs of South Carolina citizens. These 16 initiatives are further grouped by the five strategic goals of Public Service and Agriculture of Clemson University which include: 1) Agrisystems Productivity Profitability, 2) Economic and Community Development, 3) Environmental Conservation, 4) Food safety and Nutrition, and 5) Youth Development (See Table 1). These five PSA goals mirror the Government Performance Results Act (1993) goals developed by USDA-CSREES. Under each initiative, there are projects which specifically address issues relative to the initiatives and PSA/GPRA goals.

Public Service and Agriculture (PSA)

The Public Service and Agriculture (PSA) activities at Clemson University focus resources toward addressing five strategic goals stated above. The Public Service and Agriculture organizations at Clemson work closely together on the university's main campus and at the four research and education centers, 4-H leadership centers, and all the 46 county Extension offices around the state. The public service groups at Clemson include 1) Agricultural and Forestry Research System which develops relevant, research-based knowledge for agriculture, natural resources and the rural environment to enhance economic development; 2) Cooperative Extension Service which transfers scientifically-based information to individuals, groups and communities to help improve the quality of life; 3) Livestock-Poultry Health Programs which ensures the safety and health of livestock and poultry produced in South Carolina, as well as the health of companion animals and wildlife; and 4) Regulatory Programs which ensure the safety and health of plants produced in South Carolina and certifies the safe and effective use of chemicals in agriculture and home pest control (Public Service for South Carolina, Clemson University, 1997).

Population and Instrumentation

The population for this study consisted of all 240 county Extension agents employed by Clemson University Cooperative Extension Service (CUCES). A survey instrument suitable for electronic communication was developed to collect data. The instrument was designed to obtain information on two major characteristics: 1) the inservice education needs of extension agents relative to subject matter topics, professional development and

technology, and 2) demographic information--years of experience, primary area of program responsibility, etc. Respondents were asked to list at least five topics in the three categories (subject matter, professional development and technology) for which they needed inservice training. In addition, county Extension agents were asked to comment on their previous inservice training experiences. The instrument was validated for question clarity and content by a panel of three experts consisting of an extension specialist, inservice training coordinator, and an information technology specialist.

The instrument was sent to all county agents via electronic mail with a request to return (via electronic mail) the completed surveys. After two follow-ups (electronic mail), a total of 133 agents responded for a return rate of 55 percent. Frequencies and percentages were used to summarize the data.

Findings

Objective 1& 2: Identify Training Needs

The training needs identified by agents categorized by subject matter topics, professional development and technology are shown in Table 1. As shown in Table 1, a total of 100 topics were identified by county agents. Of these 100 topics, 65 (65%) were in subject matter areas grouped by five PSA goals, 21 (21%) in professional development and 14 (14%) in technology. Also, shown in Table 1 are inservice training proposals submitted by Extension specialists. Extension specialists submitted a total of 76 inservice training proposals. Of these 76 proposals, 52 (68%) were in subject matter areas grouped by five PSA goals, 16 (21%) in professional development, and 8 (10.5%) in technology. Overall, data in Table 1 indicates a good match between what was needed and what will be offered. However, there are PSA goal areas where limited number of inservice proposals submitted by specialists compared to the need expressed by county agents. It must be noted here that one cannot meet all the training needs expressed by agents because of availability of expertise, time, resources, location and other responsibilities specialists may have in offering inservice training. Therefore, specific topics under each of the five PSA goals for which training is needed should be examined.

Table 1.
List of Training Needs Expressed by County Agents and Inservice Training Proposals Submitted by Specialists Categorized by PSA Goals, Professional Development and Technology

	County Agents		Specialists	
Topics by PSA Goals	f	%	f	%
Subject Matter Topics				
PSA Goal 1: Agrisystems Productivity & Profitability	13	13.0	8	10.5
PSA Goal 2: Economic & Community Development	9	9.0	9	11.8
PSA Goal 3: Environmental Conservation	24	24.0	20	26.4
PSA Goal 4: Food Safety and Nutrition	8	8.0	8	10.5
PSA Goal 5: Youth Development	11	11.0	7	9.2
Total (Subject Matter Topics	**65**	**65.0**	**52**	**68.4**
Professional Development	21	21.0	16	21.1
Technology	14	14.0	8	10.5
Grand Total	100	100.0	76	100.0

Objective 3: Matching Agent Training Needs with Specialist Inservice Offerings

Figure 1 shows the matching of subject matter topics by PSA goals, professional development, and technology inservice training needs identified by Extension agents (left column) and inservice training proposals submitted by specialists (right column). As shown in figure 1, training needs of agents closely match with specialist's inservice offerings in the PSA goal areas of economic and community development (Goal 2), food safety and nutrition(Goal 4). However, matching of training needs versus inservice offerings by specialists were "somewhat" limited. For example, in PSA goals 1, 3, and 5, the need for training in subject matter topics exceeded the specialists' inservice offerings. Similar findings can be evidenced for professional development and technology as well (Figure 1). This discrepancy in training needs and inservice offerings calls for further examination of the specific topics needed, resources available and collaborative efforts so that the training needs can be met in a systematic, cost-efficient way.

Figure 1: Matching Agent Inservice Training Needs with Specialists' Inservice Offerings

Inservice Training Needs by Agents

PSA Goal 1: Agrisystems...
Building New Agriculture Market
Livestock Marketing--Beef, Meat, Goat
Cooperative Marketing--Cattle
Marketing Updates
Business Mange in Horticulture
Ag Finance and Management
Property Rights
Research Updates in Agriculture
Marketing Programs to Underprivileged
Retention of Small/Minority Farms
Small Farmer Vegetable Production
Embryo Transfer, Genetic Engineering
Gene Splicing and Transfer Technology

PSA Goal 2: Economic & Community...
Family Resource Management
Recruiting Underprivileged Volunteers
Managing Volunteers
Volunteer Recruitment
Leadership
Marketing Place
Nursery Crop Production
Home/Commercial Turfgrass Management
Fire Ant Control

PSA Goal 3: Environmental Conservation...
Forest Herbicides
Timber Marketing
Forest Management
New Methods for Handling Manure
Aquaculture Wildlife
Aquatic Weed ID with "Real" Weeds
Farming Wildlife
Nuisance Wildlife
Wildlife Management

Inservice Training Proposals Submitted by Extension Specialists

PSA Goal 1: Agrisystems...
Beef Cattle Risk Management
Farmland Protection and Retention Issues
Partitioned Aquacultural System
First on the Scene
Soil Nitrogen, Soil Properties
Precision Agriculture
Extension's Role in Biotechnology
Soil Acidity and Liming--Part II

PSA Goal 2: Economic & Community...
LifeSmarts for Youth
Money 2000 Reunion
Working with Volunteers
Public Issues Management
Community Leadership Development
Business Retention and Expansion
Train the Trainer--Communication Skills
Residential Irrigation
Professional Turfgrass

PSA Goal 3: Environmental Conservation...
Forestry Herbicides
Issues in Forest Management
Peanut Management Training
Current Muscadine Production Technology
Regional Small Fruits Inservice
Modern Strawberry Production
Basic Forage & Pasture Management
Pest and Crop Modeling in Tree Fruit
Weed Mgt. for Pastures and Hay Fields
Nutrient Mgt. for Pastures and Hay Fields

Inservice Training Needs by Agents

PSA Goal 3 (Continued)
Wildlife--food plots, harvesting, control
Housing Materials, Trends and Impacts
House as a System
Troubleshooting Moisture Problems
Household and Structured Pests
New Termite Treatment
Irrigation Management
Fertilization Management
Entomology
Horticulture
Poultry Science
New/Alternative Forages
Soil Amendments
CCA and Pesticides
Non-Pesticide Control Approaches

PSA Goal 4: Food Safety and Nutrition...
Food Safety
Food Styling for Media Work
Foods and Nutrition

How to Conduct Cooking School
Food Preservation
Basic Food Preparation Series for Adults
Herbal Medicine and Nutrition
Food Nutrition: Intuitive vs. Dieting

PSA Goal 5: Youth Development...
Teen Programming
Educational Materials for 4-Hers
Project Books for 4-Hers
4-H Projects
4-H General Training
4-H Program Ideas
Youth Nutrition Programs
New and Innovative Youth Programs
Information Packets
Curriculum Training
Livestock Projects

Inservice Training Proposals Submitted by Extension Specialists

PSA Goal 3 (Continued)

Evaluating Innovative Techniques and Technologies
Reducing the Impact of Animal Agriculture
Animal Manure Utilization
Urban Runoff Management
Stream Team Training
Home-A-Syst
Healthy Indoor Air in Warm Humid Climates
Pesticide Application Calibration
Insect Pests Around the Home
Introduction to Home Moisture & Related Health Issues

PSA Goal 4: Food Safety and Nutrition...
Food Packaging Basics
ServSafe Recertification
Managing Crisis Within the Media

Master Food Preserver
Post-harvest Safety and Quality of Fruits and Vegetables
Advanced Media Techniques
Helping Consumers Understand Food Safety
Home Food Preservation Foundations

PSA Goal 5: Youth Development...
Conflict Resolution and Anger Management Update
4-H Program Management Level 1
4-H Work Smarter, Not Harder
4-H Each one Teach One
Building Family Strengths
4-H Teen Leadership Development
Youth Nutrition Programs

Inservice Training Needs by Agents

Professional Development...
Writing Grants
Evaluation
Marketing Extension Programs
Filing Systems
Retirements/Benefits
Stress Management
Better Work Habits
Time Management
Balancing Workload with Less Money
Diversity
Writing News Columns/Newsletters
Coaching Skills
Career Plan
Maintaining Records
Teamwork/Communications Skills
Developing Partnerships/Futuristic Goal Setting
Problem Solving
Supervision
Evaluation of Employees
Personnel Procedures
Professional Etiquette

Technology...
Design Newsletters/Brochures
Using Internet
Windows
Web Page Development
Y2K
EFNEP Program Reporting System
Presentation
Power Point
WordPerfect
Pegasus
Quickens
Digital Camera
Word
Excel

Inservice Training Proposals Submitted by Extension Specialists

Professional Development...
Orientation
Civil Rights
Filing and Documentation
Conducting Successful Needs Assessment
Introduction to Program Development and Evaluation
Tying Program Development and Evaluation
Developing Survey Instruments
Grants: How to Get One
Diversity
Teamwork/Communications Skills
Developing Partnerships/Futuristic Goal Setting
Problem Solving
Supervision
Evaluation of Employees
Personnel Procedures
Professional Etiquette

Technology...
Windows 98 - 6 sections
WordPerfect 8 - 6 sections
WPN. - Advanced - 6 sections
Excel - 6 sections
Internet and Netscape - 6 sections
Power Point 8 - 6 sections
Pegasus - 6 sections
Digital Imaging - 6 sections

Objective 4: Framework for Inservice Training

Figure 2 depicts the proposed framework for offering inservice education programs at Clemson University Cooperative Extension Service. As shown in Figure 2, the responses from county agents to the three major components of the survey--subject matter, professional development and technology were summarized. For purposes of clarity and focus, the identified topics were further grouped into Clemson University's five Public Service and Agriculture (PSA) goals--1) Profitability of Agriculture, 2) Economic and Community Development, 3) Food safety and Nutrition, 4) Environmental Conservation, and 5) Youth Development (Table 1 and Figure 1). The 100 subject matter topics identified by agents and the 76 inservice proposals submitted by specialists were compared and/or matched to determine final inservice offerings to be included in a catalog. An inservice training catalog was developed and distributed to all agents. The next step is to monitor inservice offerings, enrollment, inservice evaluation and submission of a final report to the administration.

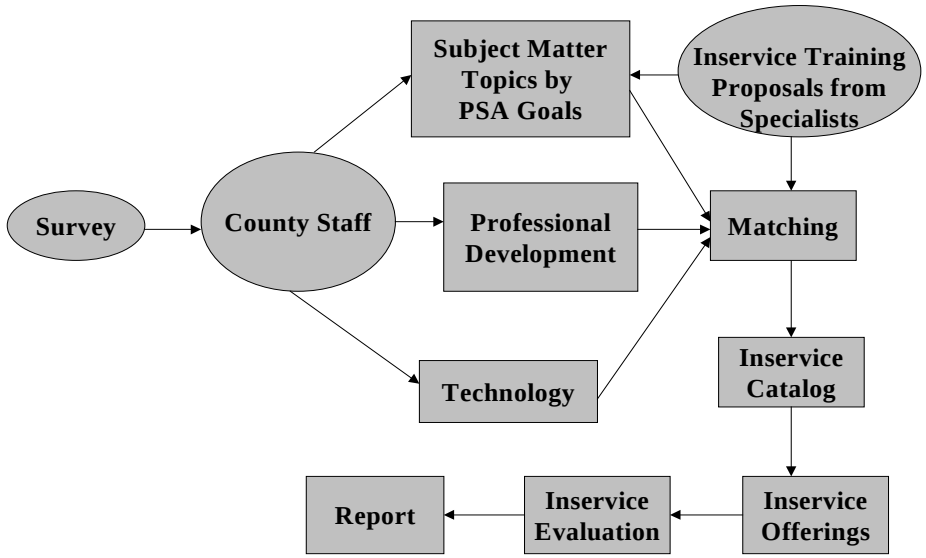

Figure 2: Framework to Identify Inservice Training Needs

Conclusions and Recommendations

Inservice training is a two-way process between university and county staff. The findings of this study have helped Clemson University Cooperative Extension Service to strengthen its inservice training programs by taking a proactive approach to identify inservice training needs of county staff.

The framework has provided a sense of direction and purpose to offering inservice training programs at Clemson University. The findings are of immense value to Extension staff development in establishing priorities to design and to implement inservice training programs. The approach used has helped both county staff, specialists and staff development personnel in targeting the critical needs of training relative to subject matter topics, professional development and technology. Such a proactive approach to inservice training will enhance the abilities of county staff to do their job and keep them up-to-date.

The findings, especially the matching of needs of agents with inservice offerings of specialists have helped the staff development unit to collaborate with other agencies--university and private--to offer inservice training for mutual benefit. For example, the Human Resources Office at Clemson University and Extension staff development are coordinating six training programs relative to professional development. Similarly, discussion is ongoing between Extension staff development and the Technical College Systems in South Carolina to identify areas of training where both institutions share expertise, educational resources, and costs.

The framework has provided a mechanism to integrate Public Service and Agriculture (PSA) goals of Clemson University, Cooperative Extension Plan of Work and inservice offerings. It is hoped that such integration will help the county staff in meeting their training and program needs that are applicable to local issues and programming.

Based on the findings and conclusions, the following recommendations are offered for further study or to make informed decisions relative to inservice training programs:

1. Extension staff development should explore opportunities for agents to meet with other agents in other counties with similar responsibilities to share ideas and successful programs.

2. Extension staff development should develop a plan or a mechanism to track or document trainings taken by county staff to determine the effectiveness of training and its lasting results that can be traced.

3. Extension administration, in consultation with county Extension directors, initiative chairs and staff development should develop guidelines to involve county staff in the planning, development, and delivery of inservice training programs.

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