AN ASSESSMENT OF IN SERVICE TRAINING NEEDS OF COOPERATIVE EXTENSION FIELD STAFF IN OKLAHOMA

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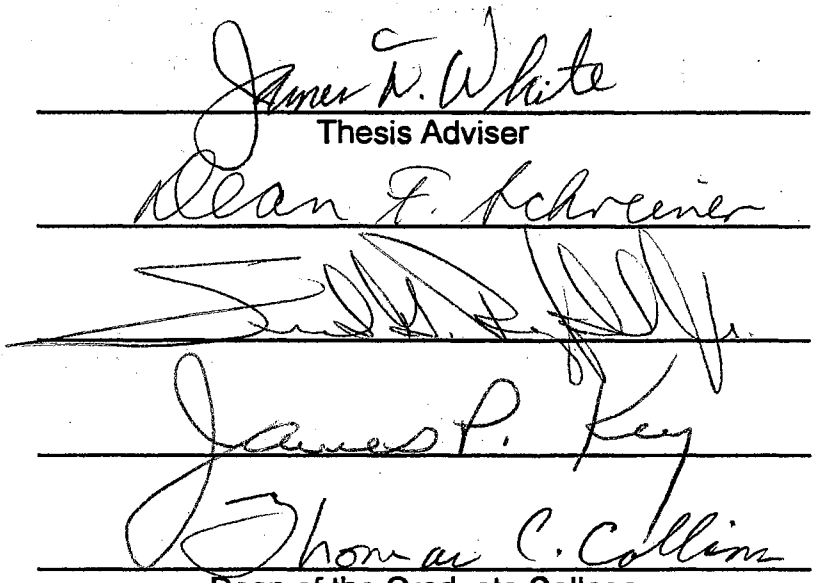

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CHAPTER I

INTRODUCTION

Determining needs of agricultural extension agents is important in developing programs of in-service education for extension faculty and staff because the needs of Extension audiences continues to change. Their needs are different and levels of understanding range from the most basic to highly technical information. The extension clientele live in a world of continual sociological, economical and technological change. The trend in technology brings new challenges that influences and consequently leads to societal changes. In addition peoples' expectations also change with science and technology. A program cannot live on its past achievements. Programs are like living organisms, they go through their own cycle, birth, growth, maturity, decline, and eventually death. Throughout in-service education an organization can actively repositioned itself for continued growth, resulting in a cycle of renovation.

The Smith-Lever Act of 1914 established the mission of Cooperative Extension as "diffusing among the peoples of the United States useful and practical information on subjects relating to agriculture and home economics, and to encourage application of the same." Since that time, the scope of the

program has been broadened to include 4-H and rural development as well. To meet this congressional mandate, Cooperative Extension personnel must be proficient in designing, developing, and delivering educational programming. In order to effectively respond to the changing needs and demands of clientele, extension professionals must continually improve their competencies in the areas of program development, delivery techniques and knowledge within their disciplines.

Professional development is a vital aspect of every Extension educator's job performance. In addition to the pursuit of an advanced degree or participation in professional development, in-service education opportunities are available in a variety of areas to meet the needs of extension educators. Therefore, it is the purpose of this research effort to identify professional development opportunities for Cooperative Extension field staff in Oklahoma.

Historically, in-service education in Cooperative Extension has been recognized as a important and effective element of staff development (Qiang, 1991). It has involved a variety of locations for conducting in-service training including: Teach in district, Individual assistance from a distinct program specialist, orientation sessions at the state level, annual conference and workshops. These have served their purpose, however, a state wide study of in-service needs and perceptions of the field staff has never been conducted.

In-service education has long been known as an important key in the process of continuing education for public school personnel. In fact the purpose

of in-service education was for the improvement of teaching in regard to educational programming.

M. Corey (1990) relating both supervision and in-service together indicated supervision and observation, even though they are among the oldest instruments for the improvement of instruction, became important methods for improving teaching in the twentieth century. Therefore, those who assume responsibility for in-service education are aware of the urgency of the task for improving instruction, are interested in developing a program and employing the means which would most rapidly remedy the situation. Direction, then as now, is widely regarded as an important efficient procedure for achieving improvement.

There has been some criticism of in-service training; however, it is still regardless of such criticism the most effective continuing process for the professional preparation and self-renewal of in-service participants to effect change in their clientele. Philip Jackson (1992) also recognizing in-service as a vehicle for change addressed in-service training as only one of many schemes to make teaching better. Whether it is the one on which we should pin our hopes and expend our energy and resources is a question we have to respond to at some point. However, we need assume that in-service training is a strategy for improving education and is of sufficient merit to warrant further thought and action.

The search for information concerning in-service training indicated few studies had been conducted addressing the needs of field staff and no nformation was available concerning the 90s technology for extension

educators. Therefore, it became imperative that those needs and components for successful in-service education and staff development for the next century be identified so future in-service training could be implemented.

Statement of the Problem

The rapid development of science and technology has created an unique change in all sectors of society, such as peoples interest, perceptions , values, careers etc. This has brought about a new challenge in the linkage between the results of advanced scientific research, teaching, and extension. To meet the social demands of the clientele there is a need for Extension field staff among others to update their knowledge and competencies. To meet this need the Cooperative Extension Service must develop a comprehensive state-wide in-service education system to enhance the agents' abilities to carry out effective educational programming and recognize existing and future staff development needs. Furthermore, time or convenience for them to attend formal courses, workshops, and in-service meetings are important considerations in planning in-service education as well as preferred delivery methods in order to assist them achieve their educational goals and better meet the needs of their clientele.

Purpose of the Study

The purpose of this study was to identify the in-service training needs of Extension educators as perceived by Oklahoma Cooperative Extension Service Field Staff.

Objectives of the Study

The following specific objectives were developed in order to accomplish the purpose of the study:

1. To identify selected demographic characteristics of OCES Extension Field Staff.
2. To identify in-service education needs as perceived by OCES Extension Field Staff.
3. To identify priorities for program topics provided through in-service education as perceived by OCES Extension Field Staff.
4. To identify preferred delivery methods for in-service education as perceived by OCES Extension Field Staff.
5. To identify the time frame preferred to receive In-service education as perceived by OCES Extension Field Staff.

Assumptions of the Study

1. The OCES Field Staff fully understood the questions and responded honestly and sincerely; and
2. The instrument developed provided the necessary information to satisfy the objectives of the study.

Scope of the Study

The scope of this study consisted of the Oklahoma Cooperative Extension Service Field Staff during the 1996 academic year.

Definition of Terms

The following terms are presented as applied to this study.

Agricultural Extension: A service or system by which rural people were provided assistance through educational programming to improve farming methods and techniques, increase production, efficiency and income, better their standards of living, and lift the social and educational levels of rural life. In other words it is helping individuals, families, and communities put research-based information to work to improve their lives.

Extension Field Staff: Refers to those individuals conducting Extension programming in 63 single county and 14 multiple county units who are responsible for the dissemination of technology to Extension clientele involved in

the four program areas of agriculture, home economics, 4-H, and rural development.

In-Service Education: It is any organized effort to improve the performance of personnel in previously assigned positions. The unique character of in-service education derives concern for all personnel, not just those with problems or deficits or unusual promise. In-service efforts are rooted in the belief that all personnel can improve their performance, that people make organizations effective, and that planned programs are most efficient.

Delivery Methods: Refers to potential and current mediums and approaches available for classes instruction.

In-service education is synonymous with on the job training, renewal, staff development, human resource development, continuing education, professional growth, professional development, etc.

Need: The perception between what is and what ought to be; something essential or a requisite.

Perception: A procedure of extracting information. As perceptual set is broadened and becomes more complex and richly patterned with maturity. The individual becomes capable of extracting facts from the surroundings.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The purpose of this chapter was to submit a comprehensive review of previous studies and related literature that were relative to in-service education and general staff development. The review will be arranged by major areas and a summary for the purpose of organization and clarity to support the objectives of this study. The major areas addressed in the study were: 1) Concepts of Extension training, 2) Adult education, 3) Implementing in-service education, 4) Extension delivery approaches, and 5) Summary.

Concept Of Training In Regard To Extension

James (1990) said, "Training is defined as an educational situation or process by which the skill and ability of employees to perform a specific job is increased. It also offers an opportunity for further development of the individual".

According to Malone (1984):

> Training is a term used to describe the programs and activities that are conducted by the organization for the purpose of maintaining and

> upgrading competencies of the staff to perform those task related to their jobs which aid the organization to reach its goals within its stated missions. Therefore , the extension organization is responsible for the design and implementation of staff training programs which have the following general objectives: 1) To strength technical subject matter competencies; and 2) To strengthen those educational process skills that aid in the delivery of programs to appropriate audiences.

This definition indicated that efficiency of any organization depends directly upon how well its staff are trained.

There is a need for training, not only at the university level but at research and extension levels. Economic and social growth in any state ultimately depends on the quality of education afforded its citizens. Extension program development depends on the efforts of dedicated and trained professionals. Leagans (1994) emphasized that the Extension workers who improve their professional abilities become very productive. He pointed out that for Extension workers to enjoy success as professionals it was necessary for them to demonstrate their abilities in planning and conducting educational programming. Leagans (1994) listed a selected number of abilities and skills as follows:

> Ability to organize: Good organization is that which groups activities, materials, or persons so as to get the best performance with the least effort.
>
> Ability to plan: The need for planning is related to the complexity and the importance of the job to be done.
>
> Knowledge and understanding of subject matter: All successful educational efforts requires significant technical subject matter. Subject matter is to the Extension educator as food is to the human body. It is life's substance.
>
> Understanding extension and its educational role: Knowledge of one's professional affiliation is a primary tool of the trade. Without such knowledge one can not truly understand his profession, or suggest action to improve it.

Skill in human relations: Man is not born a social being. These behaviors have to be learn. Extension administrators say that lack of technical competency rarely is the cause of failure among extension personnel.

Ability to clarify objectives: The act of clarification improves the preciseness with which the activity is carried out.

Communication skills: It is one thing to get information to people, it is quite another to be certain the information is accepted and understandable.

Skills in relating principle to practice: Extension workers must understand the principle laying behind his technique in order to make the technique effective. This understanding, coupled with skill, makes technique the height of professional competency.

Skill at inquiry: This is basic to the guidance or counseling process of inquiry, which consists of four primary steps:

1. Identifying the difficulty, problem, or need.
2. Discovering the local point of trouble.
3. Determining possible solutions.
4. Evaluating the alternative plans of action and selecting the best.

Ability to evaluate: With the expansion and growing complexity of extension programs has come an increasing need for operation on the basis of facts rather than opinions of knowing versus guessing (Leagans, p.139).

Howard W. Deems (1994) found in his study concerning in-service programs provided for Nebraska teachers of vocational agriculture that teachers need training in many areas of instruction, but the needs are greater in some areas than in others. The greatest needs identified were new developments in agriculture; the development of abilities to perform certain skills regarding production techniques and technology, and training in organizing and using advisory council.

In an article by Driftmier (1993) he stated that "In addition to providing pre-service training for agriculture workers we feel that it is our responsibility to provide in-service clinics and workshops".

In another example, Richarson and Eddington (1967) found in their study conducted at Oklahoma State University that training in vocational agriculture and a farm background were considered highly important in farm related occupations related to dairy processing, while training in vocational agriculture and a farm background were of some importance addressing occupations connected to buildings and structures.

Adult Education

Extension educators appear to be faced with diverse educational needs. As adult learners, it was important to explore certain elements of adult education in order to better understand the educational needs of the Extension educators.

Extension educators were classified as adult learners. Darkenwald and Merriam (1986) defined adult education as a way of not only preparing people for life, but rather with helping people to live more successfully. The author further advanced that the function of adult education was to assist adults to increase their competence, to negotiate transitions in their social roles, to help them gain greater fulfillment in their personal lives and to assist them in solving personal and community problems.

Knowles (1980) defined andragogy as the art and science of helping adults to learn, and stated four assumptions:

> 1) As a person matures their self-concept moves from one of dependent personality toward one of a self-directed human being; 2) An adult accumulates a growing reservoir of experience, a rich resource for learning; 3) The readiness of an adult to learn is closely related to the developmental tasks of his or her social role;

> and 4) There is a change in time perspective as individual mature, from future application of knowledge to immediacy of application, thus an adult is more problem centered than subject centered in learning (p. 39).

Yet another definition of andragogy offered by Donaldson and Scannel (1986) reported five andragogical theories of learning:

> 1) The need to know - adults must understand the significance of the need to know; 2) The need of self directing - adults need to take trustworthiness for their own lives; 3) Experience - adults can support one another to learn; 4) Readiness to learn - adults need to know why they were expected to learn a new skill; and 5) Orientation to learning - real world experiences and meaning full relationships must be established (p. 102).

Miller (1986), who used the term pragmatism equivalent with progressivism, suggested that philosophy should concern to adult education in three ways: 1) Determining what is real (ontology); 2) Describing truth (epistemology); and 3) Characterizing what is good (axiology). The author further suggested answering the three questions that adult education had a strong correlation with the pragmatic philosophy. The pragmatic philosophy conveys the reality (ontology) of what we usually experience in life and that learners and teachers were both subject to innovation and change. On the other hand, the author suggested that truth (epistemology) was experimental; subject to error and of necessity a continuous reassessment and axiology which proposes that the values of individual, society, and educational institution were inseparable. Furthermore, learning by doing and planning for life was the essential goal of education.

Darkenwald (1982) presented three philosophical groups in which many educators fall. Behavioralists seem to be those who endeavor to explain phenomena , specifically learning and motivation; while Gestalt theorists are those who view life uniformly and see it in its totality, rather than as an individual constituency; and Cognitivists are those who seek to understand the thinking process of individuals. Wiltbourne and Weinstock (1991) presented an illustration of the different learning philosophies of adults by alleging that adults returning as students in graduate school were generally very different in their approaches to their training as a compared to students who have progressed uninterrupted throughout their education without engagement in the real world.

Nadler (1979) introduced the term program development in a broader context relative to education and training, to produce a flexible work force that moved with the organization as it developed, changed, or grew. Later, Darkenwald (1982) stated that program development along with instruction, counseling, and administration were the foundations in the development of adult education. Program development encompasses assessing learner needs, establishing objectives, and selecting learning activities. Darkenwald (1982) also indicated that participation is the key element between theory and practice in adult education, because the majority of adults are voluntary learners. In addition, Darkenwald (1982) advanced the idea that educators must meet individual needs and adopt program practices unique to the requirements and preferences of adult learners. Furthermore, Darkenwald (1982) mentioned six conditions concerning adults participating in educational programs: the first

condition was "who", which correlates with age, income, ethnic heritage, and education. Furthermore, he mentioned the more educated an individual the more likely they would be to participate in adult education programs. The second condition "trend", which correlates with population trends and age. The third condition was "what adults learn", which correlates with free selection of courses. The fourth condition was "location for learning", which correlates with the ability of adults to attend classes not only in school buildings, but also in churches, hospitals, and at home. The fifth condition was "methods of learning", which correlates with methods employed to conduct in-service, short term conferences and workshops. The final condition was "reason for learning", which correlates with improvement of job performance and to strengthen proficiency and joy.

Professional education needs of Extension educators have formerly been satisfied through the utilization of university graduate level courses. In addition to a rapidly changing technology, advances in agriculture and a more sophisticate clientele are challenging Extension educators to continually update their skills. Oklahoma State University had previously established goals to cope with problems presented by a changing technology. Browning (1996) stated that the goal of the Division of Agriculture of Oklahoma State University was to conduct research concerning agriculture and the environment through the Oklahoma Agricultural Experiment Station system and to teach people of all ages and backgrounds in on-campus and field classrooms through the College of Agricultural Sciences and Natural Resources as well taking research based

information to all of the people in the state through the Oklahoma Cooperative Extension Service.

The curriculum implemented in graduate programs has played an important role in shaping the professional developing of Extension educators. Merrit and Wilson (1990) declared that the subsequent key argumentation should be asked by university program review boards. The key argumentation should be focused around the questions what, why, who, and how. Merrit and Wilson (1990) concluded that strong developmental programs can make a significant contribution to preparing agricultural colleges and faculty to meet the challenges of rising environmental concerns. Furthermore, the authors affirm that as the complexity of agricultural and natural resource issues intensify, and as student bodies change, graduate educational needs change, and as a result, curriculum must be revitalized continually.

Implementation of In-service Programs

A review of the literature for techniques that could be used in enacting in-service education and staff development shows that one of the most used approaches is workshops. Harris and Bassents (1990) addressed elements and basic design of workshops which should be characterized by the importance of participants being actively involved in problem solving activities, with problem solving situations as realistic and reflective of the real world as possible.

Loughary and Hopson (1979) in Producing Workshops, Seminars, and Short Courses addressed goal specificity in effective nonformal instruction.

> Regardless of what one teaches or the format one uses, effective instruction is enhanced by being specific about goals and objectives. In recent years there has been a great emphasis on performance objectives, which means describing educational goals in terms of performance or behavior that would demonstrate that the learner had attained the goal. While these objectives are sometimes pushed to the ridiculous, both instructor and student benefit from clearly stated goals. Because of the limited time in short-term training, being specific about goals is especially important. It reduces unrealistic expectations of participants and aids staff in not being overly ambitious. Goal specificity can also make an important contribution to program design. Specific goals provide a means of assessing the contribution and function of each learning/teaching activity in a program (p. 24).

Harris and Bassents (1990) developed a schematic flow chart for learning to use the workshop approach (See Figure 1).

In selecting teaching methods for in-service education, Cole (1981) stated

> Teaching methods in Extension should be selected carefully and specifically and should emanate from a knowledge base that addresses all facets of the learning situation (p. 27).

Cole (1981) reiterated her experiences with Extension professionals concerning their involvement in providing nonformal education for clientele.

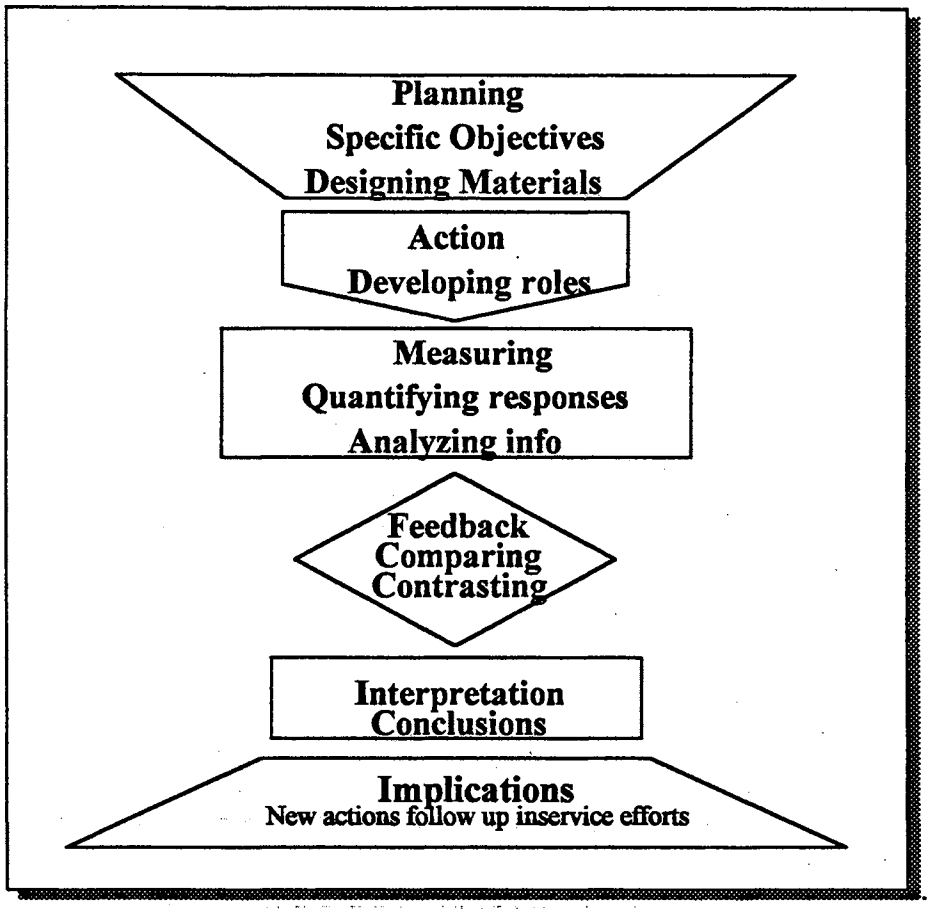

Figure 1. Designing the Learning Process

> Based on my reviews of Plans of Work and interactions with agents, I'd say "not very many." But I don't think this is due to agent indifference. Rather the focus in Extension tends to be more on content than methodology. In-service training and support materials for agents usually focus on what the agent is to teach, with little attention on how to teach.
>
> Considering the fact that agents are usually hired because of their expertise in a technical subject-matter area, we shouldn't assume that they're also prepared to fill a teaching role (p. 27).

According to Harris & Bassents (1990), workshop designs include:

- Problem solving. Each participant should be asked to responsibility toward developing a solution for the problem.

- Realistic problems. Problems should be presented in such a manner that they can be readily identified as having been taken from a real world situation.
- Data production. Each participant should be required to observe and record responses and ideas which produce data that reflect efforts to solve the problem.
- Feedback concerning data analysis. Participants are given the opportunity to review the data in which raw data have been analyzed to provided insights into the problem under consideration. It is sometimes useful to guide the participants through specific situations by analyzing their own data. In still other instances, the participants are provided with a certain amount of pre-analyzed data to facilitate the analysis of their own individual data sets.
- Generalizations and implications. The teacher/leader guides the participants through the interpretion process. The group leader initiates the discussion and interpretations to allow inferences and generalizations to be made. Finally, implications for practice in dealing with similar problems are also considered.

The description of the workshop approach implied certain assumptions about the way the people learn. Certain principles of learning seemed to be incorporated into the workshop approach while others were not. Specifically, the relationship of learning to the participant's interest, involvement, success, feedback, stress, and method of delivery were worth considering.

The effort to simulate reality in designing workshop sessions has been emphasized in many ways. The extensive use of role playing, demonstrations, films, and computers are used to give participants opportunities to relate the activities of the session to his/her past experiences.

Some limitations to the workshop approach exist, such as using it for high-level developmental skills sessions. However, there are many definitive advantages in its use. In alluding to why we do in-service education, McMahon (1970) stated. "In the last analysis, it is always the client who makes the judgment about his own need and what will satisfy that need. The problem is to find a way to elicit from the clients or potential clients expressions of need and perhaps ways of meeting those needs. The involvement of the client or potential client in program planning is one of the philosophical underpinnings of Cooperative Extension program planning" (p. 11).

Gross (1980) admonishes us to take in-service education seriously if Extension is going to be considered as a valid contender in providing relevant information to our clientele in the last one-third of the nineties and beyond. "To maintain the position of leadership it now holds, Extension must plan and implement educational programs that meet the needs of people" (p. 23).

Smith (1985) espousing the significance of Peters and Waterman's philosophy toward in-service education in the book In Search of Excellence.

> This emphasis placed on in-service by successful businesses suggests they believe training makes a difference. It implies that Extension, which also must remain credible, has a real need for consistent intensive training. Is our training doing the job? Does it make a difference? Our belief was that in-service was making a difference, that there was a significant change in our agents after in-service activities (p. 5).

Extension Delivery Approaches

The educational delivery system for Extension educators seems to be an ongoing phenomenon in nature as a part of technological growth. Oklahoma State University is becoming a visible leader in providing students and extension educators access to innovative educational delivery approaches.

One of those approaches was a televised instructional system. Currently, Extension educators may take in-service education via televised instructional programs from Oklahoma State University as well as other agricultural colleges. Such courses or in-service programs satisfy the same admission requirements of the instruction on-campus. College courses, seminars, conferences, special programs, and short courses can be offered for Extension educators for graduate credit from a wide range of fields (Oklahoma Higher Education televised instruction system bulletin, 1996).

A second delivery approach was compressed video. This system appears to be one of the latest technological advances in Extension education at Oklahoma State University. Oklahoma State (1990) provided compressed video changes via traditional television to fiber optic telephone lines which can be sent to county extension offices and classrooms throughout the state.

Another promising approach was satellite-video conferencing. This approach appears to be a promising format for in-service extension education instructional programs. According to a final report presented by the Kellogg Foundation at Oklahoma State during 1989, satellite-video conferencing was the

most cost effective choice of the methods studied. Other factors that might be considered were timelines concerning the information, program difficulty, and size of the clientele group to be reached.

A final approach that is growing in gigantic steps is computer internet (Risdon & Ostergard, 1995). The availability of computers, easy use and low costs have contributed greatly to the use of computer conferencing and the internet communication and learning approach. The extension educator, university faculty and experts world wide communicate freely to each other through the use of the wide world web "WWW". This method appears to make it possible for extension field staff to be a part of a supportive, interactive education and problem solving approach with limited interruption in the normal duties of field staff. "Like the PC, the Internet is a tidal wave. It will wash over the computer industry and many others, drowning those who don't learn to swim in its waves." Bill Gates, CEO of Microsoft Corporation.

The internet is simply a series of computer networks linked to one another around the world, communicating almost instantaneously with one another. A single network of computers might be all computers linked to one another within the university extension system and county extension offices (Huebner & Benesh, 1996). A larger network might be all the computers connected within the entire Land-Grant system (Risdon, 1994). The internet is many tens of thousands of these networks communicating with one another, like a "big net or web". University networks connected to government networks connected to business networks connected to private networks make up what we refer to as

the internet (DeYoung, 1995). These computer networks are physically linked to one another with telephone, radio, cable lines or via satellite. Networks from other continents are interconnected by the large, intercontinental telephone and fiber optic communication lines that run beneath the ocean floor. Nobody knows for sure how big the internet is, or how many networks are actually linked, but it is estimated that there are approximately thirty to thirty-eight million people that are 'on-line,' with sites on every continent, including Antarctica. New user sites are continually being added. In fact, the internet has grown at an exponential rate since its beginning. It is the largest network of computers in the world and is growing at about ten percent each month. At the current rate of growth, in just ten months from today, half of the users on the internet would be using the internet for their very first time (Risdon, 1994).

The internet was first started as an experiment by the United States Department of Defense in 1969. The United States military needed a way for its researchers to communicate and share programs with one another over their computers. The defense computer researchers developed the first long distance network of computers which was called ARPANET (Advanced Research Projects Agency - Network). Remote military sites were then 'connected' to one another via telephone lines. Universities and scientists soon saw the advantage of long distance networking, and began connecting with ARPANET, and with each other as well. Businesses and private individuals then began connecting and eventually the massive network of networks became known as the internet.

Today, no individual, no corporation and no government owns the internet. It is owned, operated and maintained by all of those who use it.

Some of the most useful tools available to the internet user, and how they might be helpful to provide in-service education are as follows:

E-mail

Perhaps the first step that many people have tried when using the internet was E-mail. In theory, E-mail is an instantaneous electronic message from a sender to a recipient (or multiple recipients) (world wide web, 1996). Compared to postal mail, (often called 'snail-mail' by internet users), E-mail is probably the most used application in the internet. With E-mail, the trainer/educator could assign a problem to Extension field staff and allow them to set up internet within university classrooms across the state, other states, countries, or even in other continents. Through E-mail, Extension educators would have the opportunity to send messages to literally thousands of businesses or to private individuals (the clientele). Farmers may ask experts in a specific field or discipline, whether it is agricultural economics or entomology, questions about a particular problem. University faculty can use the E-mail in the same way, by communicating with colleagues thousands of miles away, comparing lesson plans, and solving problems.

FTP

File Transfer Protocol (FTP) can be an extremely useful tool for any extension educator or extension program organizer. With the FTP program on the internet, sound and graphic files, lessons or even computer software can be obtained and downloaded into systems serving the Extension field staff. For instance, if an extension educator in Cotton County wanted to get the book dairy nutrition from the library at Oklahoma State University or from Texas A&M University, he/she would simply open up the FTP option, find the OSU or TAMU, choose the animal science section of the library, then find the book. The book's text would appear through the internet, then it could be downloaded into the professional's own files.

Telnet

Telnet is another extremely useful Internet tool for educators and in-service education. Through Telnet, remote access is possible from other computer sites. Through Telnet, it is possible for the in-service educator to access and log-in to their extension or university computer from any other computers that are connected to the internet anywhere in the world. Files can be downloaded, E-mail messages can be checked, and any other feature can be accomplished that they would normally do on their office computer (world wide web, 1996). An in-service participant could use the same technique to alter a computer assignment they have been working on. A user simply opens the

Telnet application, then types the server's name, account and password, and Telnet opens the account, just as if they were at their original work computer.

World Wide Web

The World Wide Web (WWW) makes up a very large percentage of the internet. Nearly seventy percent of all information searches are handled through the World Wide Web, and this is where most educators and in-service education participants find information on a variety of subjects. Information is quickly found on the World Wide Web through typing in key words. The key words are searched through different search engines, such as Infoseek and Lycos, or through search directories, such as Yahoo and Magellan (world wide web, 1996). These search engines look for key words in their files. The search results from the search engine are then listed and the in-service educator or participant may choose from the titles found.

Some of the most creative ways of using the internet involve creating home pages, subscribing to the Journal of Extension or other professional publications, or simply finding other sources of current information. In reality, the uses of the World Wide Web are only limited by the imagination and creativity of the user. The information available to learn just about anything is probably contained somewhere in the 'web'; it is just up to the user to find it.

Internet is changing for the future. Currently a modem is needed to access the internet. The fastest modem in commercial use today can process 56 kilobits per second, though most can process 28.8 kps. Current research is now

being conducted to replace the modem with high speed connections through a digital dial tone. This technology uses Integrated Service Digital Network (ISDN) lines that can process information at 128 kilobits per second. Faster processing systems are being researched using coaxial-based cable TV lines and special cable-data modems. These experimental modems using coaxial cable TV lines will be able to process information at over 27 megabits per second. Video and voice transmission over the internet is being explored for future use. A video conferencing concept developed at Cornell University allows users to see the person or people they are talking to via video cameras by a software program called CU-SeeMe. Some feel that even the personal computer will eventually become obsolete in the next few decades. Research is being done to replace computers with an inexpensive terminal and a connection to the internet. Some believe that the personal computer is not necessary and that a large central computer with a high speed network system is all that is needed for all computer transmissions. This would eliminate the need for computer software, upgrades, etc. since central computers would contain all the information and programs necessary for any computer application.

The Delphi Technique

The delphi technique is an idea-generating strategy that does not require face-to-face interaction. The technique uses a series of questionnaires and summarized feedback/responses from preceding surveys.

The approach is useful in many ways by generating and clarifying ideas, reaching consensus, prioritizing, and making decisions on alternative actions. Since face-to-face interaction is not a requirement, the Delphi technique could be used with groups that would not ordinarily meet together.

Many variations of the Delphi technique can be designed. The following steps outlined by Gross (1980) revealed his approach for using the Delphi technique:

> The Delphi Technique was originally used to help make predictions about the future. It has been used extensively in forecasting technological developments. Wouldn't this be appropriate to use in planning educational programs for the future?
>
> The Delphi procedures consists of several rounds:
>
> 1. Participants are asked to list their opinion on a specific topic, such as recommended activities or predictions about the future.
> 2. Participants are then asked to evaluate the list of opinions against some criteria, such as importance, chance of success.
> 3. Each participant receives the list and a summary of responses to the items, and, if in the minority, is asked to revise his/her opinion or indicate his/her reason for remaining in the minority.
> 4. Each participant again receives the list, an updated summary of responses, a summary of minority opinion, and a final chance to revise his/her opinion (p. 23-24).

Commenting further concerning advantages of the delphi technique from his perspective, Gross (1980) stated:

> Considering the present need to conserve time and energy, the long-range planning techniques described here can be a way of

> learning from a group of knowledgeable respondents the problems, needs, and opportunities of concern (p. 23).

Some advantages of the delphi technique as presented by Carter, et al. (1977) also included: 1) allowing study participants to remain anonymous; 2) rather inexpensive; 3) free of social pressure, personality, peer influence, as well as individual dominance; 4) allows an opportunity for sharing information and developing consensus among participants; 5) conducive to independent thinking and gradual formulation; 6) provides an opportunity for a well-selected respondent/study panel with a mix of local officials, knowledgeable individuals, citizens of the community, regional officials, academic social and agricultural scientists, extension agents, etc. who can provide a broad analytical perspective concerning local problems; and 7) may be used to develop consensus among opposing groups. However, the disadvantages indicated by Carter, et al. (1977) reveals: 1) opinions and attitudes of selected groups may not be representative of the total population; 2) there seems to be the tendency to eliminate extreme positions and force a middle-of-the-road consensus; 3) it is more time-consuming than the nominal group process; 4) that the delphi approach is not the only solution; 5) skills in written communication are required; and 6) adequate time and preparation as well as the participant's commitment to complete the entire process are required.

8. A final summary and feedback report is prepared and distributed to respondents. The feedback reports throughout this process allow for the exchange of opinions and priorities, and often result in individual changes in opinions and priorities after respondents evaluate the total groups perspectives.

Some of the advantages of the technique presented by Carter, et al. (1977) include: 1) allows study participants to remain anonymous; 2) inexpensive; 3) free of social pressure, personality influence, peer influence and individual dominance; 4) allows an opportunity for sharing information and reasoning among participants; 5) generally conducive to independent thinking and gradual formulation; 6) a well-selected respondent/study panel--a mix of local officials, knowledgeable individuals, citizens of the community, regional official, academic social and agricultural scientists, extension agents, etc.--can provide a broad analytical perspective on local problems and concerns; and 7) can be used to develop a consensus among groups hostile to each other. However, the disadvantages revealed by Carter, et al. (1977) involve: 1) judgments are those of a selected group of people and may not be representative unless the total population is used; 2) tendency to eliminate extreme positions and force a middle-of-the-road consensus; 3) more time-consuming than the nominal group process; 4) should not be perceived as the only solution; 5) requires skills in written communication; and 6) requires adequate time and the participant's commitment to complete the entire process.

Summary

The four principal sections in this chapter included concepts of extension training, adult education, implementing in-service education and extension delivery approaches.

The first section focused on various concepts in regard to extension and teacher training. The second section was intended to address the factors which influenced adult learners to participate in in-service education as well as selected participation difficulties. The third section related to implementation of in-service training and staff development programs using workshops as a popular approach, and the final section addressed a variety of delivery approaches for Extension education programming and/or staff development. Innovative delivery methods used by Oklahoma State University from televised and videotaped training sessions to the latest "Internet" are among the smorgasbord of available opportunities. The internet, though relatively new in extension settings, will soon be common place if current growth continues. The extension educator can prepare for the future now by learning and experimenting with the new technologies. The possibilities for the internet are endless, and it is truly up to Extension leaders to develop creative ways of using it in the staff development process and in-service education.

CHAPTER III

DESIGN AND CONDUCT OF THE STUDY

Introduction

The intent of this chapter was to describe the procedures for the study. The design and conduct of the study reflected the intent of the research. Also to present a description of the methods and procedures that were employed in conducting this study. These methods and procedures were determined by the purpose of this study which was to determine the in-service education and staff development needs as perceived by Cooperative Extension Field Staff in the state of Oklahoma. The objectives of the study were: 1) to identify selected demographic characteristics of Cooperative Extension Field Staff in Oklahoma, 2) to identify the in-service training needs as perceived by Cooperative Extension Field Staff, 3) to identify priorities for program topics provided through in-service education as perceived by Cooperative Extension Field Staff, 4) to identify preferred delivery methods for in-service education as perceived by Cooperative Extension Field Staff, and 5) to identify the time-frame preferred to receive in-service education as perceived by Cooperative Extension Field Staff.

Population of the Study

The population of this study involved 230 Cooperative Extension Field Staff in the state of Oklahoma, who were identified from the 1996 Extension Personnel Directory compiled by the Division of Agricultural Sciences and Natural Resources at Oklahoma State University. These individuals were responsible for planning, designing, conducting, and assessing extension programs at the district, area, and county levels.

The population of this study included 105 Extension professionals in the area of agriculture (AG), 79 home economics professionals (HE), 42 4-H and youth development professionals, and four rural development specialists.

Development of the Instrument

In order to gather data which included input from all OCES field staff, a delphi procedure was adopted for the development of the survey instruments. In the first round of the study, an open survey was developed (Appendix A). The instrument directed the potential participants to list their perceived needs based on their experience and judgment and make recommendations, addressing courses or topics, delivery methods, best time to be offered, and that each respondent indicate their program area of responsibility. They were requested to list as specifically as possible their perceived training needs, preferred course delivery methods, and preferred time-frame as to when to offer in-service education. All respondents remained anonymous.

In the second round, a second questionnaire (Appendix B) was developed based from the responses of the first instrument. Extension educators received a copy of their unranked opinions listed from the first round instrument and were asked to rank their identified needs by order of their perceived importance. Extension educators were requested to rank as specifically as possible their perceived training needs, preferred course delivery methods, and preferred time-frame. All respondents remained anonymous.

The third instrument (Appendix C) included the survey list ranked during the second round asking the Extension educators to rank again their perceptions regarding general opinions and to re-rank major topics areas independently by sub-areas. The final instrument consisted of four independent parts. The first part was designed to collect selected demographic data, while the second part considered program topics or courses listed by the respondents during first round and ranked during the second round. Specific topics were arranged in sub-areas for the purpose of data collection and analysis under major topic headings. The third part of the questionnaire was designed to identify priority methods for delivering in-service education, and the fourth part to identified the best time to offer in-service education programming for the OCES field staff.

In order to achieve validity of the questions, content and format were reviewed by a panel of State Extension Specialists at Oklahoma State University. After several instrument reviews were conducted, the Associate Director for Cooperative Extension in Oklahoma, the researcher, and members

of the researcher's graduate committee concluded that the instrument was ready to administer to the field staff.

Institutional Review Board (IRB)

Federal regulations and Oklahoma Sate University policy require review and approval of all research studies that involve human subjects before investigators can begin their research. The Oklahoma State University Office of University Research Services and the IRB conduct this review to protect the rights and welfare of human subjects involved in biomedical and behavioral research. In agreement with the aforementioned policy, this study received the proper supervision and was granted authorization to continue AG-96-016 (Appendix D).

Collection of the Data

The delphi technique used in this study included three instruments. The first instrument was mailed June 26, 1996 to district staff members, area specialists, and each county or unit extension director. Each county or extension unit also received the same survey packet mailed to district staff and area specialists, a cover letter to the county director (CED) with directions for completing the survey, enough instruments for all extension staff in his/her office, and a stamped self-addressed envelope to return survey responses. By July 15, 1996, 127 (55.22%) Extension educators had participated in the study. The instrument was designed to initiate the process and determine the most

urgent needs concerning training and staff development needs perceived by extension field staff.

Results of the first survey were refined and returned July 30, 1996 to all district staff, area specialists, and county and unit field staff to determine their priorities. Again, a packet containing a cover letter explaining the procedures and the refined/updated instrument for ranking their priorities, the second stage in the delphi process, was mailed to potential study participants. A stamped self-addressed envelope was also included for the study participants to return their responses. By August 25, 1996, 196 respondents (85.22%) had returned their surveys. The instrument was designed for the study participants to rate their most pressing needs and priorities which had already been determined in the first instrument concerning their perception of in-service education needs.

The third and final instrument was refined based on the results of the second stage of the delphi process and mailed September 12, 1996. The survey packet contained a cover letter explaining procedures for completing the questionnaire was addressed to district staff, area specialists, and county directors along with survey instruments for all Extension educators and a stamped self-addressed envelope for the participants to return their responses. County directors were again asked to assist with the study in distributing surveys to field staff with responsibilities at the county level and then return the responses as a county or multi-county unit to save postage. By October 25, 1996, 161 (70%) had been received from the two hundred and four Extension educators who were mailed surveys in the final round of the study. Out of the

total returned, 154 (66.96%) of the questionnaires were usable, while seven (3.04%) were not usable. The seven non-usable surveys were not accepted because the participants did not respond correctly to the questions by crossing out all the sub-areas.

Analysis of the Data

Considering the nature of the study, descriptive statistics were used for data analysis. The data was analyzed using frequencies, percentages, weighted means, ranges, standard deviations, ranks, and cumulative distribution of selected results. The Statistical Analysis System (SAS) software package was used to treat the data utilizing a personal computer P5-166 IBM compatible. Procedures such as proc univariate with frequencies was used. This is the general form of SAS for producing frequency tables and proc means weight which is the general form of producing weighted means.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this chapter is to analyze the perceived in-serviced education needs of the Oklahoma Extension Field Staff and to present the findings. The population of this study included all extension field staff (230) in the State of Oklahoma during 1996. Each Extension educator was asked to participate in a three stage delphi study and to complete each of instruments administered.

To have a better understanding of the data each sub-area was analyzed and presented as an unit. Analysis of the findings were presented in tables and figures to facilitate this presentation.

Population

The study population consisted of 230 Extension field staff members in the state of Oklahoma, which include 105 extension educators with agricultural responsibilities (AG), 79 home economics (HE), 42 4-H and youth development, and four rural development specialists. This group of 230 Extension field staff

included 192 county staff, 27 area specialists, and 11 district staff. The population of this study was identified using the 1996 Extension Personnel Directory at Oklahoma State University.

Collection of Data and Delphi Process

For the final round in the delphi study, 204 instruments were mailed to Extension educators during the middle of September 1996. The overall response rate was 70 percent, or 161 extension educators participating in the study. Out of the total returned, 154 (66.96%) of the questionnaires were useable, while seven (3.04%) were not useable.

The delphi technique used in this study included three instruments. The first instrument was mailed June 26, 1996 to district staff members, area specialists and each county or unit extension director. Each county or extension unit also received the same survey packet mailed to district staff and area specialists, a cover letter for the county director with directions for completing the survey, enough instruments for all extension staff in his/her office, and a stamped self-addressed envelope to return survey responses. By July 15, 1996, 127 (55.225%) extension educators had participated in the study. The instrument was designed to initiate the process and determine the most urgent needs concerning training and staff development needs perceived by extension field staff.

Results of the first survey were refined and returned July 30, 1996 to all district staff, area specialists, and county and unit field staff to determine their

priorities. Again, a packet containing a cover letter explaining procedures and the refined/updated instrument for ranking their priorities, the second stage in the delphi process, was mailed to potential study participants. A stamped self-addressed envelope was also included for the study participants to return their responses. By August 25,1996, 196 respondents (85.22%) had returned their surveys. The instrument was designed for the study participants to rate their most pressing needs and priorities which had already been determined in the first instrument concerning their perception of in-service education needs.

The third and final instrument was refined based on the results of the second stage of the delphi process and mailed September 12, 1996. The survey packet contained a cover letter explaining procedures for completing the questionnaire which was addressed to district staff, area specialists, and county directors, instruments for all Extension educators, and a stamped self-addressed envelope for the participants to return their responses. County directors were again asked to assist with the study in distributing surveys to field staff with responsibilities at the county level and then return the responses as a county or multi-county unit to save postage. By October 25,1996, 161 (70%) had been received from the two hundred and four Extension educators who were mailed surveys in the final round of the study. Out of the total returned 154 (66.96%) of the questionnaires were usable, while seven (3.04%) were not usable. The seven non-usable surveys were not accepted because the participants did not

respond correctly to the questions by crossing out all the sub-areas. The overall responses to the delphi study are presented in Figure 2.

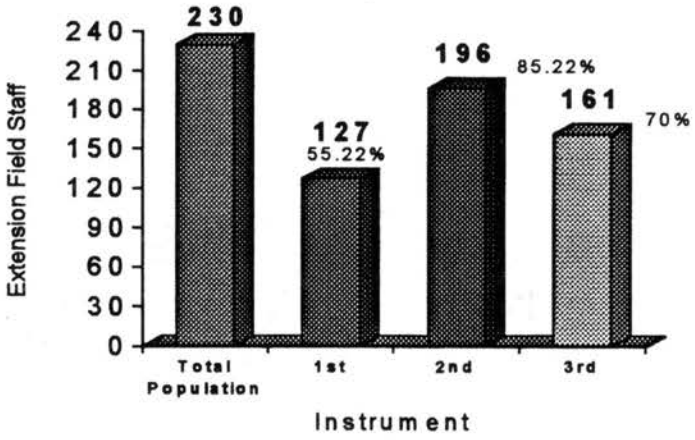

Figure 2. Distribution of Responses to the Overall Study Compared To Total Population.

Data Analysis

Frequencies, weighted means, ranks, standard deviations, overall ranks, and curve fitting models were used to analyze the data. Questions in the study were separated into three categories. The first category concerning demographic information was analyzed using a statistical procedure in the SAS program labeled as a proc univariate process. The second category consisting of courses or topics were based on the respondents' perceptions and analyzed using the statistical procedure for univariate analysis, frequency and percentages. The third category concerning the most appropriate time-frame for in-service education/staff development and potential delivery methods involved the participants' ranks and was analyzed using the SAS procedure referred to as

proc univariate frequency. General linear models were used to determine if there were mean differences in perceptions or attitudes by the area of responsibility and highest level of formal education.

Selected Demographic Characteristics

Program Area of Responsibility

Program areas of responsibility of the respondents in the final survey were presented in Figure 3. This question addressed the current primary area of responsibility. Although the question asked for one major area, some of the participants provided more than one response.

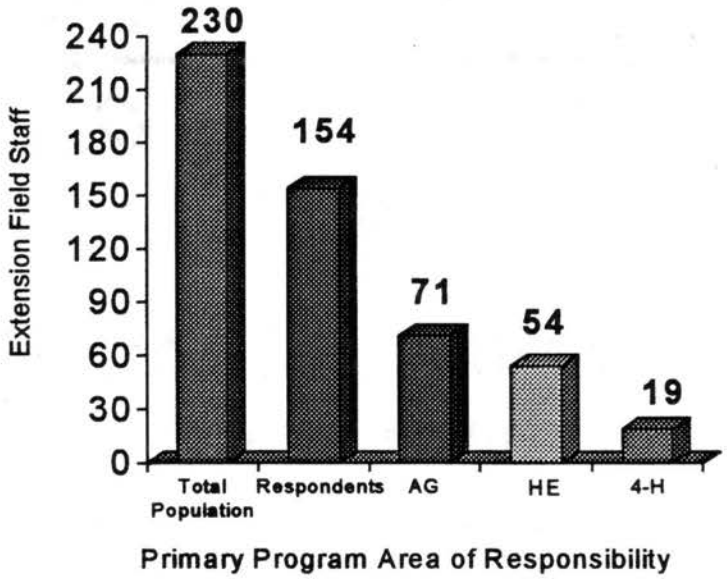

Figure 3. Overall Primary Program Areas of Responsibility Compared with Total Population

The data in Figure 3 reveals the frequency of respondents in each primary program area of responsibility. The distribution indicated of the 154 total extension field staff, seventy one respondents revealed that their primary area of responsibility was in agriculture, fifty nine respondents expressed their primary area as being home economics, while nineteen respondents disclosed their primary area of responsibility was 4-H and youth development.

Gender

The overall gender responses presented in Figure 4 indicated out of the 154 respondents, 97 (63%) were male and 57 (37%) were female.

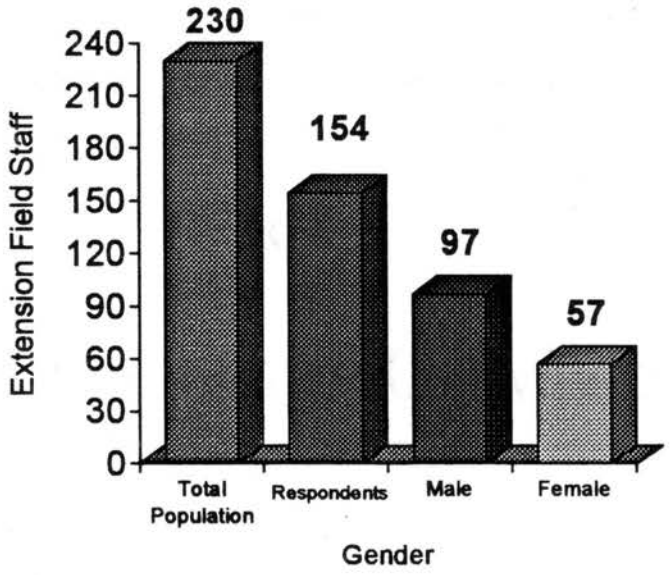

Figure 4. Distribution of Respondents by Gender

Ethnic Heritage

The ethnic heritage of the respondents to the survey presented in Figure 5 revealed our of the 154 total Extension field staff respondents, 134 (87%) were Caucasian, 16 (10.4%) Native American, four (2.6%) African American, and none were reported to be Asian or Hispanic.

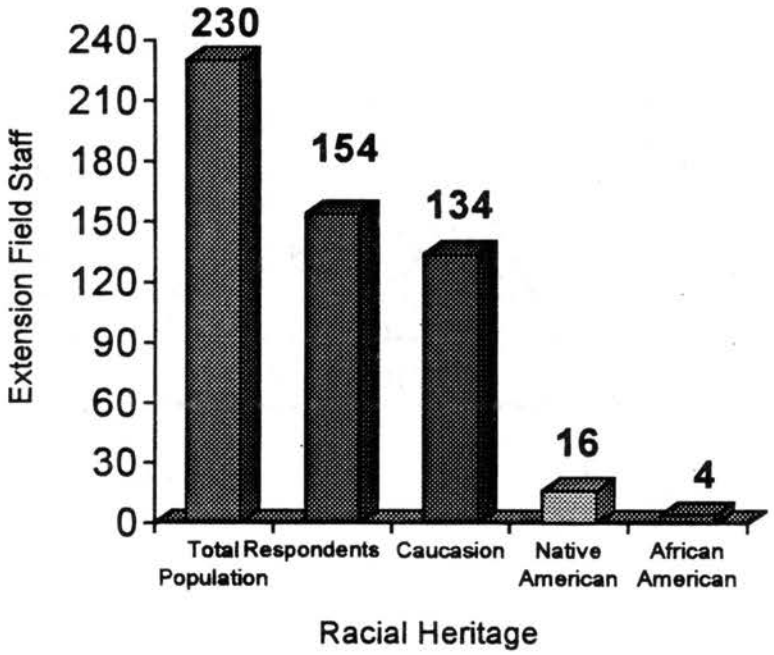

Figure 5. Distribution of Respondents by Racial Heritage.

Age

As reported in Table I, one person was born in 1937, two were born in 1938, three were born in 1940, two were born in 1941, two were born in 1943, three were born in 1944, four were born in 1945, five were born in 1946, four were born in 1947, three were born in 1948, five were born in 1949, four were born in 1950, five were born in 1951, six were born in 1952, eight were born in 1953, one was born in 1954, fourteen were born in 1955, five were born in 1956, three were born in 1957, three were born in 1958, six were born in 1959, one were born in 1960, eleven were born in 1961, five were born in 1962, seven were born in 1963, one were born in 1960, eleven were born in 1961, five were born in 1962, seven were born in 1963, one were born in 1964, five were born in 1965, four were born in 1966, six were born in 1967, nine were born in 1968, three were born in 1969, three were born in 1979, one were born in 1971, two were born in 1972, four were born in 1973, and three did not answer.

TABLE I

DISTRIBUTION OF RESPONDENTS BY YEAR OF BIRTH

Year of Birth	Frequency (N=151)	Percent
1937	1	0.7
1938	2	1.3
1940	3	2.0
1941	2	1.3
1943	2	1.3
1944	3	2.0
1945	4	2.6
1946	5	3.3
1947	4	2.6
1948	3	2.0
1949	5	3.3
1950	4	2.6
1951	5	3.3
1952	6	4.0
1953	8	5.3
1954	1	0.7
1955	14	9.3
1956	5	3.3
1957	3	2.0
1958	3	2.0
1959	6	4.0
1960	1	0.7
1961	11	7.3
1962	5	3.3
1963	7	4.6
1964	1	0.7
1965	5	3.3
1966	4	2.6
1967	6	4.0
1968	9	6.0
1969	3	2.0
1970	3	2.0
1971	1	0.7
1972	2	1.3
1973	4	2.6

The overall mean age of the participants was 39.18 (Figure 6).

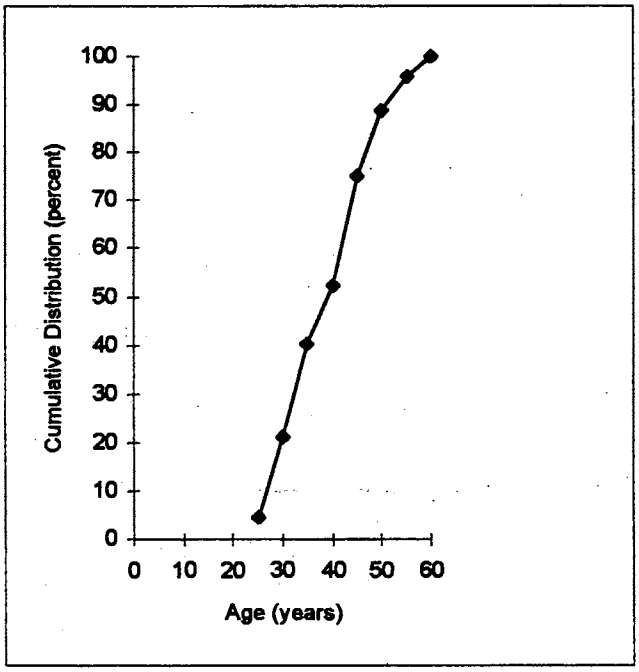

Figure 6. Age of OCES Extension Educators

Years of Extension Experience in Current Program Area of Responsibility

The data in Table II showed the distribution of extension field staff by years of experience in their current program area of responsibility. Five respondents had six months of experience, while eighteen respondents had one year of experience and sixteen respondents had two years of experience.

Furthermore, three respondents had two and a half years of experience, seven had three years of experience, one respondent had three and a half years of experience, five respondents had four years of experience, and twelve respondents had five years of experience. Also, one respondent had five and a half years of experience, three respondents had six years of experience, two respondents had six and a half years of experience, six respondents had seven years of experience, three respondents had eight years of experience, and two respondents had ten years of experience. In addition, six respondents had eleven years of experience, ten respondents had twelve years of experience, one respondent had thirteen years of experience, ten respondents had fourteen years of experience, three respondents had fifteen years of experience, eight respondents had sixteen years of experience, four respondents had seventeen years of experience, three respondents had eighteen years of experience, and one respondent had nineteen years of experience. Again, six respondents had twenty years of experience, four respondents had twenty-one years of experience, five respondents had twenty-two years of experience, four respondents had twenty-three years of experience, two respondents had twenty-four years of experience, while one respondent had twenty-five years of experience, and two respondents had twenty-seven years of experience.

TABLE II

DISTRIBUTION OF RESPONDENTS IN CURRENT EXTENSION PROGRAM AREAS OF RESPONSIBILITY BY YEARS OF EXPERIENCE

Years of Experience in Current Program Area	Frequency (N=154)	Percent
0.5	5	3.2
1.0	18	11.7
2.0	16	10.4
2.5	3	1.9
3.0	7	4.5
3.5	1	0.6
4.0	5	3.2
5.0	12	7.8
5.5	1	0.6
6.0	3	1.9
6.5	2	1.3
7.0	6	3.9
8.0	3	1.9
10.0	2	1.3
11.0	6	3.9
12.0	10	6.5
13.0	1	0.6
14.0	10	6.5
15.0	3	1.9
16.0	8	5.2
17.0	4	2.6
18.0	3	1.9
19.0	1	0.6
20.0	6	3.9
21.0	4	2.6
22.0	5	3.2
23.0	4	2.6
24.0	2	1.3
25.0	1	0.6
27.0	2	1.3

The overall mean experience in current program area of responsibility was 9.57 years (Figure 7).

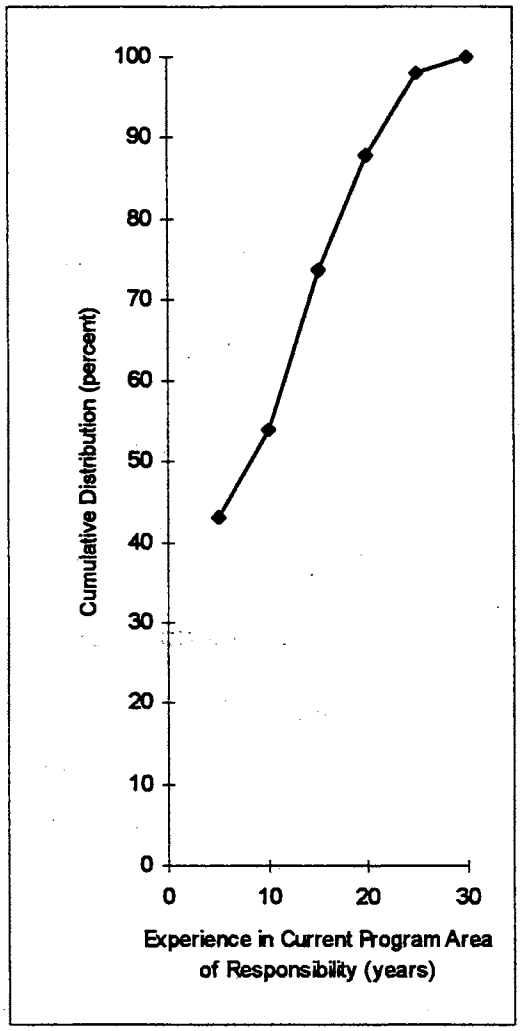

Figure 7. Distribution of Extension Educators by Experience in Current Program Area of Responsibility

Years of Extension Experience

The data in Table III revealed the distribution of extension field staff by total years of extension experience. Two respondents had six months of experience, thirteen respondents had one year of experience, eight respondents had two years of experience, five respondent had three years of experience, one

respondent had three and a half years of experience, and six respondents had four years of experience. In addition, seven field staff respondents had five years of experience, one respondent had five and a half years of experience, eight respondents had six years of experience, eight respondents had seven years of experience, one respondent had seven and a half years of experience, four had respondents had eight years of experience, two respondents had nine years of experience, three respondents had nine and a half years of experience, and two respondents had ten years of experience. Furthermore, three respondents had eleven years of experience, thirteen respondents had twelve years of experience, two respondents had thirteen years of experience, and eight respondents had fourteen years of experience. Likewise, five respondents had fifteen years of experience, five respondents had sixteen years of experience, one respondent had seventeen years of experience, three respondents had eighteen years of experience, while four respondents had nineteen years of experience, and ten respondents had twenty years of experience. Also, two field staff respondents had twenty-one years of experience, five respondents had twenty-two years of experience, five respondents had twenty-three years of experience, one respondent had twenty-four years of experience, six respondents had twenty-five years of experience, two respondents had twenty-six years of experience, four respondents had twenty-eight years of experience and one respondent had thirty-one years of experience.

TABLE III

DISTRIBUTION OF EXTENSION EDUCATOR BY YEARS OF EXTENSION EXPERIENCE

Total Years of Extension Experience	Frequency (N=154)	Percent
1.5	2	1.3
1.0	13	8.4
2.0	8	5.2
3.0	5	3.2
3.5	1	0.6
4.0	6	3.9
5.0	7	4.5
5.5	1	0.6
6.0	8	5.2
7.0	8	5.2
7.5	1	0.6
8.0	4	2.6
9.0	2	1.3
9.5	3	1.9
10.0	2	1.3
11.0	3	1.9
12.0	13	8.4
13.0	2	1.3
14.0	8	5.2
15.0	5	3.2
16.0	5	3.2
16.5	4	2.6
17.0	1	0.6
18.0	3	1.9
19.0	4	2.6
20.0	10	6.5
21.0	2	1.3
22.0	3	1.9
23.0	5	3.2
24.0	1	0.6
25.0	6	3.9
26.0	2	1.3
28.0	4	2.6
30.0	1	0.6
31.0	1	0.6

The overall mean years of extension experience of participants was 11.94 years (Figure 8).

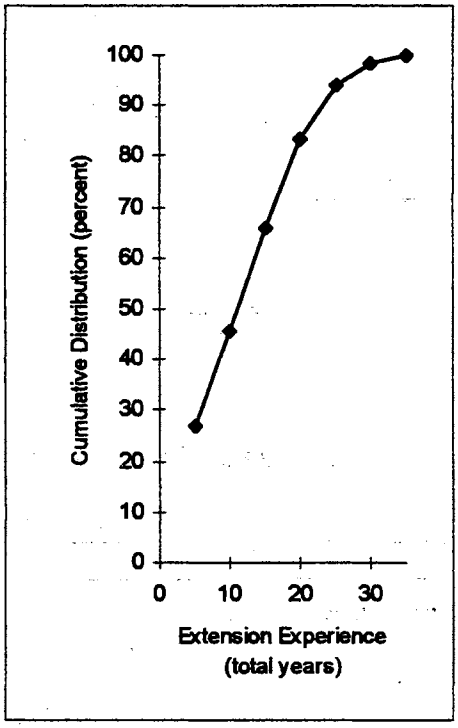

Figure 8. Distribution of Total Years of Extension Experience

Highest Level of Formal Education

The highest level of formal education of the respondents participating in this survey were presented in Figure 9. Distribution of the respondents was as follows for the 154 total extension field staff: ninety-seven (62.99%) respondents held masters degrees, fifty-six (36.36%) of the field staff

respondents had completed bachelors of science degrees, and one (0.65%) respondent was classified as other (the respondent did not specify).

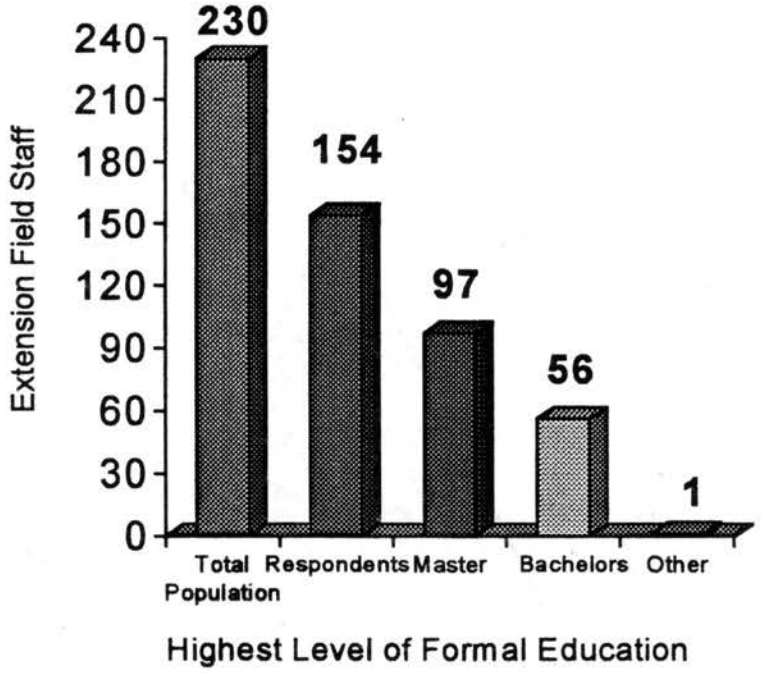

Figure 9. Distribution of Respondents by Highest Level of Formal Education

Emphasis of Undergraduate Study

The data in Table IV illustrated the distribution of respondents by their undergraduate major. Out of a total of 151 respondents, 60 (39.8%) majored in agriculture education, while 46 (30.5%) respondents held undergraduate degree in home economics and 23 (15.2%) respondents had earned B. S. degree in animal science. In addition, five (3.3%) respondents majored in agricultural economics, while five (3.3%) respondents had education as a major and five

(3.3%) respondents majored in horticulture. Furthermore, three (2%) respondents majored in agricultural business, two (1.3%) respondents majored in foods and nutrition, one (0.7%) respondent had agronomy as their undergraduate major, and one (0.7%) respondent majored in religion.

TABLE IV

DISTRIBUTION OF RESPONDENTS BY UNDERGRADUATE MAJOR

Major	Frequency (N=151)	Percent
Agricultural Education	60	39.8
Agricultural Communications	46	30.5
Animal Science	23	15.2
Agricultural Economics	5	3.3
Education	5	3.3
Horticulture	5	3.3
Agricultural Business	3	2.0
Foods and Nutrition	2	1.3
Agronomy	1	0.7
Religion	1	0.7

Emphasis of Graduate Study

The data in Table V disclosed the distribution of respondents by major emphasis of graduate study. Out of a total of 134 respondents, 39 (29.10%) indicated agricultural education was their major area of study, while 24 (17.91%) respondents revealed education was their major area and 17 (12.69%) respondents declared home economics their major area of emphasis. Furthermore, eight (5.97%) respondents stated agricultural economics was their major area of graduate study, while seven (5.22%) respondents reported animal science as their major and six (4.48%)respondents affirmed human development was their major area of study. In addition, five (3.73%) respondents expressed horticulture as their major area of graduate study, while four (2.99%) were involved in graduate programs with emphasis in clothing and four (2.99%) respondents indicated consumer economics as their major. Also, three (2.24%) respondents stated business administration was their major area of emphasis, while three (2.24%) respondents majored in counseling as well as three (2.24%) respondents with foods and nutrition as a major and three (2.24%) respondents who completed graduate programs in family relations and child development. Moreover two (1.53%) respondents selected agronomy as the emphasis for their graduate programs, while six (4.48%) study participants collectively conducted graduate programs in administration; adult education; design, housing, and merchandising; relations and child development; psychology; and range science, respectively.

TABLE V

DISTRIBUTION OF RESPONDENTS BY GRADUATE EMPHASIS

Major	Frequency (N=134)	Percent
Agricultural Education	39	29.1
Education	24	17.9
Home Economics	17	12.7
Agricultural Economics	8	6.0
Animal Science	7	5.2
Human Development	6	4.5
Horticulture	5	3.7
Clothing	4	3.0
Consumer Economics	4	3.0
Business Administration	3	2.2
Counseling	3	2.2
Foods and Nutrition	3	2.2
Family Relations & Child	3	2.2
Agronomy	2	1.5
Administration	1	0.8
Adult Education	1	0.8
Design, Housing & Merchandising	1	0.8
Family	1	0.8
Psychology	1	0.8
Range Management	1	0.8

Graduate Hours

As reported in Table VI, the distribution of respondents by graduate hours was as follows: eight (6.11%) had ten hours of graduate work or less, while eleven (8.40%) had 11 to 15 hours and three (2.29%) field staff had completed 16 to 20 hours of graduate work. Furthermore, 27 (20.61%) field staff had 21 to 30 hours of graduate work, whereas 62 (47.33%) extension professionals had from 31 to 40 hours of graduate work beyond the baccalaureate degree and ten (7.63%) study respondents reported completing 41 to 50 hours of graduate

study. However, six (4.58%) extension professionals reported from 51 to 60 hours of graduate work, while three (2.29%) field staff respondents had 70 hours of course work above the bachelors degree and one (0.76%) respondent reported 85 hours of graduate study.

TABLE VI

DISTRIBUTION OF RESPONDENTS BY THE NUMBER OF GRADUATE HOURS OF STUDY

Number of Hours	Frequency (N=131)	Percent
2	1	0.8
5	2	1.5
8	3	2.3
9	1	0.8
10	1	0.8
11	1	0.8
12	9	6.9
15	1	0.8
16	1	0.8
17	1	0.8
20	1	0.8
23	4	3.1
26	1	0.8
27	1	0.8
28	3	2.3
30	18	13.7
32	5	3.8
33	1	0.8
34	1	0.8
35	4	3.1
36	38	29.0
37	3	2.3
38	4	3.1
39	1	0.8
40	5	3.8
42	1	0.8
45	5	3.8
46	1	0.8
47	1	0.8
48	2	1.5
55	1	0.8
60	5	3.8
70	3	2.3
85	1	0.8

The average number of graduate hours completed by the study respondents was 33.24 (Figure 10).

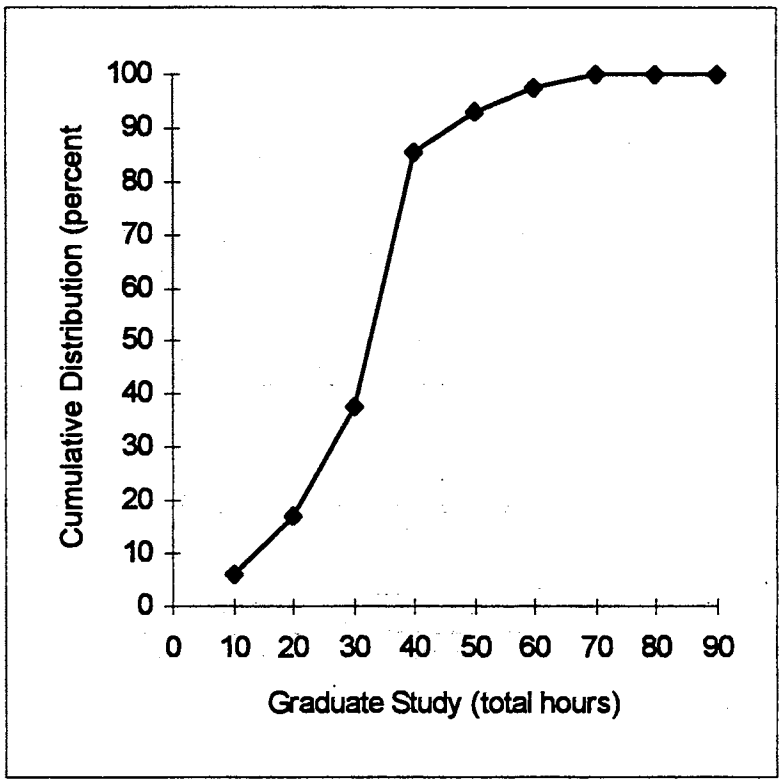

Figure 10. Distribution of Graduate Work Completed Among OCES Field Staff Respondents

Reason For Participating in In-Service Education/Staff Development Opportunities

The distribution of respondents by reason of participation in in-service education and staff development opportunities is presented in Figure 11. Figure 11 revealed 82 (53.25%) respondents involved themselves in in-service

educational programming for the purpose of obtaining an advance degree, whereas 49 (31.82%) respondents participated because of perceived need, and eleven (7.14%) respondents were attracted to new areas of interest. However, nine (5.84%) respondents admitted they participated because of their desire for professional development and three (1.95%) respondents indicated a perceived need for personal development

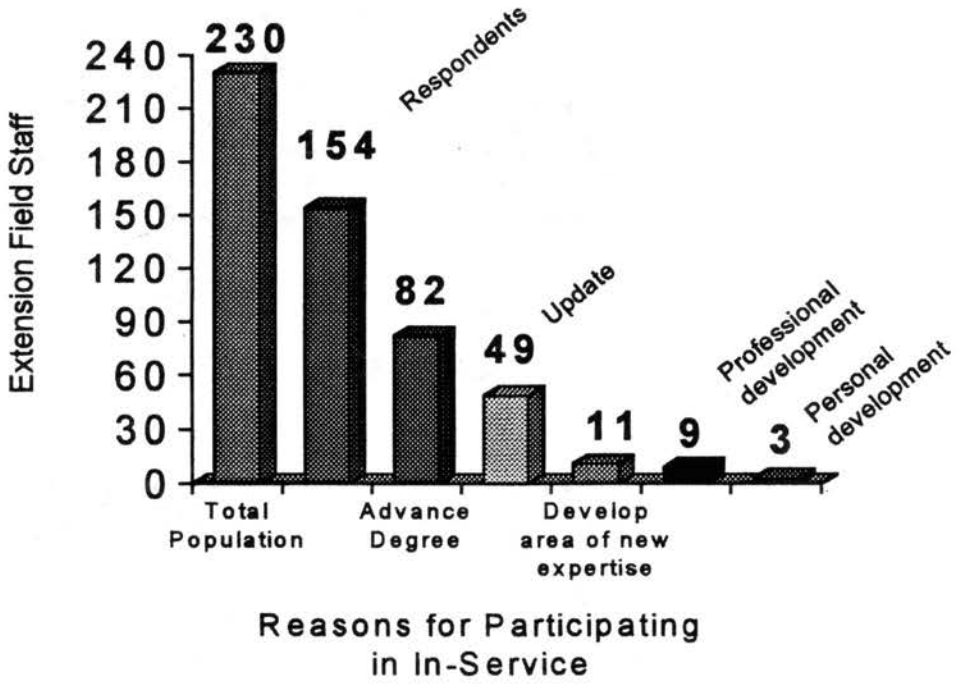

Figure 11. Distribution of Respondents by Reason for Participating in In-Service Education/Staff Development Opportunities

Priorities for Courses/Topics

Courses/topics were divided in to sub-areas for identification. There were a total of 82 topics in nine different sub-areas. Each area was ranked independently and each topic was identified by best delivery method and best delivery time. The perceived needs and priorities for the courses identified were determined by extension program area and associated sub-areas such as computers, horticulture, environmental sciences, production agriculture, program administration, program development and others.

Not all sub-areas indicated as priorities by respondents in stages one and two were responded to by survey participants in stage three. Responsibility, interest and knowledge seemed to be the reasons for attracting the attention and need for respondent participation in in-service education. Not all sub-areas were ranked and in many cases left blank.

Computers

The data in Table VII showed the ranking of the respondents' perceptions in the sub-area of computers. One hundred forty-eight (96.1%) respondents selected as the top priority course "Internet use" with a mean score of 2.24 and a standard deviation of 1.27, followed by "Computer technology (hardware)" with a mean score of 2.43 and a standard deviation of 1.24. The "Use of computer programs (databases, spreadsheets)" ranked third with a mean score of 2.91 and a standard deviation of 1.33 subsequently followed by the "Use of several

computer programs in agriculture" with a mean score of 3.61 and standard deviation of 1.11 and the least priority was "Internet newsletters" with a mean score of 3.85 and a standard deviation of 1.49. The means ranged was 2.24 to 3.85, whereas the standard deviation ranged from 1.11 to 1.49. Respondents ranked best delivery method as "Hands On" learning and the best delivery time was confirmed as "Day Time During the Week".

TABLE VII

A SUMMARY OF OCES FIELD STAFF PREFERENCES CONCERNING IN-SERVICE EDUCATION PRIORITIES, BEST DELIVERY METHOD, AND BEST DELIVERY TIME BY COMPUTER TOPICS

Computer Topics	Rank	Mean	SD	Freq	Best Delivery Methods	Freq	Best Delivery Time	Freq
Internet use	1	2.243	1.27	148	Hands-On	115	Day Time During Week	101
Computer technology (Hardware)	2	2.439	1.24	148	Hands-On	105	Day Time During Week	106
Use of computer Programs (Database, spreadsheet)	3	2.912	1.33	148	Hands-On	115	Day Time During Week	103
Use of several computer programs in agriculture	4	3.615	1.11	148	Hands-On	103	Day Time During Week	100
Internet newsletters	5	3.858	1.49	148	Hands-On	107	Day Time During Week	100

Horticulture

The data in Table VIII revealed the rankings of the respondents in the sub-area of horticulture. One hundred thirty-one respondents (85.06%)

indicated their top priority was "General horticulture" which had a mean score of 3.85 and a standard deviation of 2.60, followed by "Trees and shrubs" with a mean score of 4.06 and a standard deviation of 1.92, subsequently followed by "Commercial fruit & nut production" with a mean score of 4.19 and a standard deviation of 2.67, "Landscape plant selection update" with a mean score of 4.20 and a standard deviation 1.49, and "Home gardening & lawn" with a mean score of 4.52 and a standard deviation of 2.86. Those areas of horticulture with lower priorities were "Floriculture" with a mean score of 4.64 and a standard deviation 2.32 and "Commercial vegetable production" with a mean score of 5.07 and a standard deviation of 1.62. The least priority area in horticulture was "Water gardens" which had score a mean of 5.16 and a standard deviation of 2.18. The mean scores among horticulture topics ranged was 3.85 to 5.16, while the standard deviations ranged from 1.49 to 2.86. Respondents again ranked "Hands On" learning as the best delivery method and the best delivery time "Day Time During the Week".

TABLE VIII

A SUMMARY OF OCES FIELD STAFF PREFERENCES CONCERNING IN-SERVICE EDUCATION PRIORITIES, BEST DELIVERY METHOD, AND BEST DELIVERY TIME BY HORTICULTURE TOPICS

Horticulture Topics	Rank	Mean	SD	Freq	Best Delivery Methods	Freq	Best Delivery Time	Freq
General horticulture	1	3.8549	2.60	131	Hands-On	73	Day Time During Week	94
Trees and shrubs	2	4.0610	1.92	131	Hands-On	73	Day Time During Week	91
Commercial fruit and nut production	3	4.1967	2.67	132	Hands-On	72	Day Time During Week	95
Landscape plant selection update	4	4.2061	1.49	131	Hands-On	73	Day Time During Week	91
Home gardening and lawn	5	4.5267	2.86	131	Hands-On	74	Day Time During Week	94
Floriculture	6	4.6412	2.32	131	Hands-On	72	Day Time During Week	93
Commercial vegetable production	7	5.0763	1.62	131	Hands-On	73	Day Time During Week	94
Water gardens	8	5.1679	2.18	131	Hands-On	72	Day Time During Week	91

Human Environmental Science

The data in Table IX illustrated how the respondents ranked the sub-areas of human environmental science. This area included the second largest number of topics with 16. The 137 (88.96%) respondents selected as their major priority "Getting along with difficult people" with a mean score of 2.96 and a standard deviation of 3.37, subsequently followed by "Parenting skills" with a mean score of 3.51 and a standard deviation of 2.46, "Stress management" with a mean score of 3.79 and a standard deviation of 2.36, "Money management" with a mean score of 4.83 and a standard deviation of 2.43; and "Physical fitness and wellness" with a mean score of 5.29 and a standard deviation of 2.57. Furthermore, "Food Nutrition" received a mean score of 5.58 and a standard deviation of 2.29, followed by "Family living" with a mean score of 7.27 and a standard deviation of 1.88; "Parenting with risk parents" (first time parents) had a mean score of 7.70 and a standard deviation of 2.41, and "Home based businesses" with a mean score of 8.75 and a standard deviation of 2.73. In addition, "Food preservation" had a mean score of 9.57 and a standard deviation of 2.29, followed subsequently by the next priority "Housing Interiors & surfaces" and "Sewing" with a mean score of 11.30 and a standard deviation of 2.78. The last four priorities were "Sergers", "Extension teaching methods", "Telecommunications", and "Curriculum development", with mean scores of 12.55, 13.04, 13.35, and 13.94 and standard deviations of 2.96, 3.16, 3.99, and 4.12, respectively. The mean scores ranged from 2.96 to 13.94, while the

standard deviations ranged from 1.98 to 4.12. The respondents selected the best perceived method of delivery as "Hands On" and the best delivery time as "Day Time During the Week" for all topics in this area.

TABLE IX

A SUMMARY OF OCES FIELD STAFF PREFERENCES CONCERNING IN-SERVICE EDUCATION PRIORITIES, BEST DELIVERY METHOD, AND BEST DELIVERY TIME BY HUMAN ENVIRONMENTAL SCIENCE TOPICS

Human Environmental Science Topics	Rank	Mean	SD	Freq	Best Delivery Methods	Freq	Best Delivery Time	Freq
Getting along with difficult people	1	2.9635	3.37	137	Hands-On	75	Day Time During Week	96
Parenting skills (topics)	2	3.5182	2.46	137	Hands-On	75	Day Time During Week	90
Stress management	3	3.7971	2.36	138	Hands-On	75	Day Time During Week	97
Money management	4	4.8321	2.43	137	Hands-On	76	Day Time During Week	95
Physical fitness wellness (exercise and health)	5	5.2919	2.57	137	Hands-On	79	Day Time During Week	91
Food nutrition	6	5.5808	2.29	136	Hands-On	77	Day Time During Week	91
Family living	7	7.2773	1.88	137	Hands-On	73	Day Time During Week	92
Parenting with risk parents or first time parents	8	7.7080	2.41	137	Hands-On	76	Day Time During Week	89
Home based business (overview)	9	8.7518	2.73	137	Hands-On	77	Day Time During Week	92
Food preservation	10	9.5766	2.29	137	Hands-On	81	Day Time During Week	95
Housing (interior and surfaces)	11	10.7591	2.23	137	Hands-On	79	Day Time During Week	91
Sewing	12	11.3065	2.78	137	Hands-On	85	Day Time During Week	92
Sergers	13	12.5547	2.34	137	Hands-On	87	Day Time During Week	92
Extension teaching methods	14	13.0438	3.16	137	Hands-On	77	Day Time During Week	97
Telecommunications	15	13.3503	3.99	137	Hands-On	80	Day Time During Week	95
Curriculum development	16	13.9416	4.12	137	Hands-On	77	Day Time During Week	96

Production Agriculture

The data shown in Table X expressed the rankings of the respondents in the sub-area of production agriculture. This area represented the largest number of courses/topics identified by the study participants (19). The 122 respondents selected as their major priority "Beef forages" with a mean score of 3.13 and a standard deviation of 3.73; followed subsequently by "Fertilizer & herbicides" with a mean score of 3.77 and a standard deviation of 3.02; "Beef production" with a mean score of 4.29 and a standard deviation of 3.12; "Weeds & brush control" with a mean score of 5.13 and a standard deviation 2.80; "Beef nutrition" with a mean score of 6.19 and a standard deviation of 2.58; "Financial records" with a mean score of 6.21 and a standard deviation 2.96; "Production agriculture" with a mean score of 7.18 and a standard deviation of 3.02; "Farm management" with a mean score of 7.40 and a standard deviation of 2.72; "Marketing products and commodity markets" with a mean score of 9.15 and a standard deviation of 3.42; "Plant disease diagnosis methods" with a mean score of 9.44 and a standard deviation 2.46; while "Alternative agriculture enterprises" had a mean scores of 10.5 and a standard deviation 3.24; and "Insect and disease resistance varieties and cultivors" revealed a mean score of 11.52 and a standard deviation of 2.30. The last three priorities were "Dairy nutrition", "Grain grading", and "Ostrich production", with mean scores of 16.63, 17.28, and 18.28 and standard deviations of 1.62, 2.07, and 2.80, respectively. The means ranged from 3.13 to 18.28, while the standard deviations ranged from 1.62 to

4.16. Respondents selected the best delivery method as "Hands On" learning and the best delivery time "Day Time During the Week" for all topics in this area.

TABLE X

A SUMMARY OF OCES FIELD STAFF PREFERENCES CONCERNING IN-SERVICE EDUCATION PRIORITIES, BEST DELIVERY METHOD, AND BEST DELIVERY TIME BY PRODUCTION AGRICULTURE TOPICS

Production Agriculture Topics	Rank	Mean	SD	Freq	Best Delivery Methods	Freq	Best Delivery Time	Freq
Beef forages	1	3.1393	3.73	122	Hands-On	75	Day Time During Week	92
Fertilizer and herbicides	2	3.7704	3.02	122	Hands-On	73	Day Time During Week	94
Beef production	3	4.2950	3.12	122	Hands-On	74	Day Time During Week	93
Weeds and brush control	4	5.1311	2.80	122	Hands-On	73	Day Time During Week	91
Beef nutrition	5	6.1967	2.58	122	Hands-On	75	Day Time During Week	91
Financial records	6	6.2131	2.96	122	Hands-On	77	Day Time During Week	95
Production agriculture	7	7.1803	3.02	122	Hands-On	72	Day Time During Week	92
Farm management	8	7.4016	2.72	122	Hands-On	75	Day Time During Week	95
Marketing products & commodity markets	9	9.1557	3.42	122	Hands-On	73	Day Time During Week	95
Plant problem diagnosis methods (Plant pathology)	10	9.4426	2.46	122	Hands-On	74	Day Time During Week	93
Alternative agriculture enterprises	11	10.5000	3.24	122	Hands-On	76	Day Time During Week	91
Insect and disease resistance varieties & cultivors	12	11.5245	2.30	122	Hands-On	76	Day Time During Week	94
Wheat & milo production	13	11.8114	3.42	122	Hands-On	76	Day Time During Week	93
Tillage and moisture conservation	14	12.8520	2.74	122	Hands-On	75	Day Time During Week	95
Livestock judging	15	13.8032	4.16	122	Hands-On	80	Day Time During Week	92
IPM updates	16	14.7623	2.76	122	Hands-On	76	Day Time During Week	94
Dairy nutrition, total mixed rations	17	16.6393	1.62	122	Hands-On	76	Day Time During Week	92
Grain grading	18	17.2868	2.07	122	Hands-On	79	Day Time During Week	93
Ostrich production	19	18.2868	2.80	122	Hands-On	74	Day Time During Week	90

Program Administration

The data displayed in Table XI expressed the ranking of the respondents in the sub-area of program administration. This area represented 15 major courses/topics. The 145 (94.16%) respondents selected "Motivation" as their priority with a mean score of 3.60 and a standard deviation of 3.94, followed subsequently by "Balancing multiple assignments" with a mean score of 3.51 and a standard deviation of 2.46; "Time management" with a mean score of 3.79 and a standard deviation of 2.36; "Management skills" with a mean score of 4.83 and a standard deviation 2.43; "Marketing 4-H programs, recruitment and maintenance" with a mean score of 5.29 and a standard deviation of 2.57; "Employee benefits update" with a mean score of 5.58 and a standard deviation 2.29; "Counseling skills and techniques" with a mean score of 7.27 and a standard deviation of 1.88; while "Supervisors skills & techniques" had a mean score of 7.70 and a standard deviation of 2.41; and "Program evaluation" with a mean score of 8.75 and a standard deviation of 2.73. Furthermore, "Human resource management skills" subsequently followed with a mean score of 9.57 and a standard deviation 2.29 and "Financial Planning for retirement" had a mean score of 11.30 and a standard deviation of 2.78. The last three priorities identified were "Resource development", "Supervision & management of para-professionals" and "Key people in county offices to be trained", with means scores of 12.55, 13.04, 13.35, and 13.94 and standard deviations of 2.96, 3.16, 3.99, and 4.12, respectively. The mean scores ranged from 3.60 to 12.97,

whereas the standard deviations ranged from 2.37 to 3.96. Respondents selected "Hands On" learning as the best delivery method and the best delivery time "Day Time During the Week" for all topics in this area.

TABLE XI

A SUMMARY OF OCES FIELD STAFF PREFERENCES CONCERNING IN-SERVICE EDUCATION PRIORITIES, BEST DELIVERY METHOD, AND BEST DELIVERY TIME BY PROGRAM ADMINISTRATION TOPICS

Program Administration Topics	Rank	Mean	SD	Freq	Best Delivery Methods	Freq	Best Delivery Time	Freq
Motivation	1	3.6068	3.94	145	Hands-On	73	Day Time During Week	101
Balancing multiple assignments	2	3.6344	3.4	145	Hands-On	73	Day Time During Week	101
Time management	3	4.3517	3.06	145	Hands-On	73	Day Time During Week	101
Management skills	4	6.0551	2.37	145	Hands-On	73	Day Time During Week	101
Marketing 4-H programs, recruitment and maintenance	5	6.3517	3.43	145	Hands-On	75	Day Time During Week	99
Employee benefits update	6	6.5448	3.86	145	Hands-On	71	Day Time During Week	100
Counseling skills and techniques	7	7.5241	2.73	145	Hands-On	73	Day Time During Week	99
Supervisors skills and techniques	8	7.5862	2.72	145	Hands-On	75	Day Time During Week	101
Program evaluation	9	8.1724	2.82	145	Hands-On	75	Day Time During Week	102
Human resource management skills	10	9.6482	2.75	145	Hands-On	71	Day Time During Week	101
Financial planning for retirement	11	9.7103	3.25	145	Hands-On	74	Day Time During Week	101
Resource development	12	10.2482	3.47	145	Hands-On	74	Day Time During Week	107
Delegation	13	11.1034	3.18	145	Hands-On	73	Day Time During Week	102
Supervision and management of para-professionals	14	11.9310	3.96	145	Hands-On	73	Day Time During Week	103
Key people in county offices to be trained	15	12.9793	3.57	145	Hands-On	72	Day Time During Week	104

Program Development

The data disclosed in Table XII indicated the rankings of the respondents for the sub-area of "program development". This area was represented by six major courses/topics. The 146 (94.81%) respondents selected "Creative marketing for extension programs" as their major priority with a mean score of 1.53 and a standard deviation of 1.03, followed by "Grant writing opportunities outside extension" with a mean score of 2.67 and a standard deviation of 1.31; "Management of new programs in changing times" had a mean score of 2.95 and a standard deviation of 0.93; while "Networking outside extension" disclosed a mean score of 3.97 and a standard deviation of 0.92; and "Country government" expressed a mean score of 4.71 and a standard deviation of 1.15. The least priority was "Marketing extension programs to a urban audience" with a mean score of 5.19 and a standard deviation of 1.53. The mean scores ranged from 1.53 to 5.19, while the standard deviations ranged from 0.92 to 1.53. Respondents selected as the best delivery method as "Hands On" learning and the best delivery time "Day Time During the Week" for all topics in this area.

TABLE XII

A SUMMARY OF OCES FIELD STAFF PREFERENCES CONCERNING IN-SERVICE EDUCATION PRIORITIES, BEST DELIVERY METHOD, AND BEST DELIVERY TIME BY PROGRAM DEVELOPMENT TOPICS

Program Development Topics	Rank	Mean	SD	Freq	Best Delivery Methods	Freq	Best Delivery Time	Freq
Creative marketing for extension programs	1	1.5342	1.03	146	Hands-On	72	Day Time During Week	96
Grant writing opportunities outside extension	2	2.6712	1.31	146	Hands-On	77	Day Time During Week	101
Management of new programs in changing times	3	2.9558	0.93	146	Hands-On	75	Day Time During Week	100
Networking outside extension	4	3.9726	0.92	146	Hands-On	73	Day Time During Week	97
County government	5	4.7123	1.15	146	Hands-On	71	Day Time During Week	103
Marketing extension programs to an urban audience	6	5.1917	1.53	146	Hands-On	71	Day Time During Week	97

Rural Development

The data illustrated in Table XIII revealed the respondents' rankings of the sub-area of "program development". This area was represented by two major courses. The 146 (94.81%) respondents selected "Rural real estate issues" water and fire protection as the major priority with a mean score of 1.17 and a standard deviation of 0.37, followed by "Improve leisure for rural counties" with a mean score of 1.82 and a standard deviation of 0.37. Respondents selected the best delivery method as "Hands On" learning and the best delivery time "Day Time During the Week" for both topics in this sub-area.

TABLE XIII

A SUMMARY OF OCES FIELD STAFF PREFERENCES CONCERNING IN-SERVICE EDUCATION PRIORITIES, BEST DELIVERY METHOD, AND BEST DELIVERY TIME BY RURAL DEVELOPMENT TOPICS

Rural Development Topics	Rank	Mean	SD	Freq	Best Delivery Methods	Freq	Best Delivery Time	Freq
Rural real estate issues	1	1.1716	0.37	134	Hands-On	71	Day Time During Week	100
Improve leisure for rural counties	2	1.8283	0.37	134	Hands-On	72	Day Time During Week	99

Youth Development

The data revealed in Table XIV disclosed the rankings of the respondents in the sub-area of "youth development". This area was represented by eight major courses/topics. The 154 (100%)respondents selected "4-H programs" as their major priority which included "leadership, citizenship, empowerment, on-trac" with a mean score of 2.43 and a standard deviation of 2.09, followed by "Fun educational programs and ideas for 9-15 yr. olds." had a mean score of 3.02 and a standard deviation of 1.88; "Recruiting and working with volunteers" had a mean score of 3.29 and a standard deviation of 1.48; "Volunteers accountability and liability extension programs" expressed a mean score of 4.19 and a standard deviation of 1.65; "Youth issues" disclosed a mean score of 4.83 and a standard deviation of 1.41, while "Building self-esteem" revealed a mean score of 5.15 and a standard deviation of 1.53; and "How to present school

enrichment" displayed a mean score of 5.97 and a standard deviation of 1.99. The least priority topic identified was "Youth at risk topics (ages 1-5 yr)" which had a mean score of 7.10 and a standard deviation of 1.87. The mean scores ranged from 2.43 to 7.10, and the standard deviations ranged from 1.41 to 2.09. Respondents selected the best delivery method as "Hands On" learning and the best delivery time "Day Time During the Week" for all topics in this area.

TABLE XIV

A SUMMARY OF OCES FIELD STAFF PREFERENCES CONCERNING IN-SERVICE EDUCATION PRIORITIES, BEST DELIVERY METHOD, AND BEST DELIVERY TIME BY YOUTH DEVELOPMENT TOPICS

Youth Development Topics	Rank	Mean	SD	Freq	Best Delivery Methods	Freq	Best Delivery Time	Freq
4-H programs	1	2.4316	2.09	139	Hands-On	74	Day Time During Week	100
Fun educational programs and ideas for 9-15 yr olds	2	3.0287	1.88	139	Hands-On	76	Day Time During Week	97
Recruiting and working with volunteers	3	3.2943	1.48	139	Hands-On	72	Day Time During Week	97
Volunteers' accountability & liability extension programs	4	4.1942	1.65	139	Hands-On	71	Day Time During Week	96
Youth issues	5	4.8345	1.41	139	Hands-On	71	Day Time During Week	99
Building self-esteem	6	5.1510	1.53	139	Hands-On	72	Day Time During Week	98
How to present school enrichment	7	5.9710	1.99	138	Hands-On	75	Day Time During Week	98
Youth at risk topics (ages 1-5 yr)	8	7.1007	1.87	139	Hands-On	74	Day Time During Week	98

Other

The data indicated in Table XV the rankings of the respondents in the sub-area of "Other". This area was represented by two major issues. The 129 (83.77%) respondents ranked "More masters courses in areas other than AGED" as their major priority with a mean score of 1.20 and a standard deviation of 0.40, followed by "Wildlife management" with a mean score of 1.80 and a standard deviation of 0.39. Respondents selected the best delivery method as "Hands On" learning and the best delivery time "Day Time During the Week" for both topics in this sub-area.

TABLE XV

A SUMMARY OF OCES FIELD STAFF PREFERENCES CONCERNING IN-SERVICE EDUCATION PRIORITIES, BEST DELIVERY METHOD, AND BEST DELIVERY TIME BY OTHER TOPICS

Other Topics	Rank	Mean	SD	Freq	Best Delivery Methods	Freq	Best Delivery Time	Freq
More masters courses in areas other than AGED	1	1.2015	0.40	129	Hands-On	72	Day Time During Week	93
Wildlife management	2	1.8062	0.39	129	Hands-On	78	Day Time During Week	92

Most Appropriate Time for In-service Education/Staff Development

The data shown in Table XVI was indicative of the most appropriate time for in-service education/staff development as perceived by field staff professionals. The 149 (96.75%) respondents ranked "Day Time During the Week" and "During In-Service Education" as the two most preferred times for in-service with mean scores of 1.71 and 2.28 and standard deviations of 0.70 and 1.81, respectively, followed by "January, February and December" with a mean score of 3.53 and a standard deviation of 1.63; "Time to work it in" with a mean score of 4.26 and a standard deviation 1.95; and "Winter Inter-Session" with a mean score 6.46 and a standard deviation of 2.04. "Summer session", "Compressed semester schedules", "April", and "Fall" seem to be ranked in the middle with mean scores of 7.1, 7.4, 7.5, and 8.3, respectively. The three least preferences ranked were "October", "Evenings", and "Weekends" with means scores of 8.51, 9.87, 10.91 and standard deviations of 2.09, 2.23, 2.35, respectively. The mean scores ranged from 1.71 to 10.91, and the standard deviations ranged from 0.70 to 2.43.

TABLE XVI

A SUMMARY OF OCES FIELD STAFF PRIORITIES FOR IN-SERVICE EDUCATION BY DELIVERY TIME

Course Delivery Time	Rank	Mean	SD	Freq
Day time during the week	1	1.7111	0.70	149
During in-service education	2	2.2885	1.81	149
January, February, and December	3	3.5637	1.63	149
Time to work it in	4	4.2684	1.95	149
Winter inter-session	5	6.4697	2.04	149
Summer session	6	7.0738	2.14	149
Compressed semester schedule	7	7.4020	2.43	149
April (planting season)	8	7.4966	2.16	149
Fall session	9	8.3034	1.94	149
October (harvest)	10	8.5167	2.09	149
Evenings	11	9.8724	2.23	149
Weekends	12	10.9127	2.35	149

Potential Delivery Methods

The data displayed in Table XVII showed the overall rankings of the most appropriate "delivery methods". The 154 (100%) respondents selected "Hands on" and "In district" as the two most preferred methods with mean scores of 2.26 and 3.22 and standard deviations of 0.97 and 1.67, respectively, followed by "Off campus in individual counties" with a mean of 4.74 and a standard deviation of 2.63; whereas "Field trips" had a mean score of 5.53 and a standard deviation of 2.43; and "Short course presentations" revealed a mean score 5.57 and a standard deviation of 2.43. "On campus seminar", "Videotape", "Annual Conference", "One-net/Compressed video", and "Oklahoma City" were "delivery methods" which seemed to rank in the middle with mean scores ranging from

6.58 to 9.25 and considerable variation indicated by measures of dispersion exceeding 2.8 standard deviations. The three delivering methods garnering the least preference were "Slides", "On campus courses", and "Orientation" with mean scores of 11.44, 11.10, and 11.80 and standard deviations of 1.82, 3.0, and 3.13, respectively. The mean scores ranged from 2.26 to 11.80, and the standard deviations ranged from 0.97 to 3.39.

TABLE XVII

A SUMMARY OF OCES FIELD STAFF PRIORITIES FOR IN-SERVICE EDUCATION BY DELIVERY METHOD

Course Delivery Methods	Rank	Mean	SD	Freq
Hands on	1	2.2662	0.97	154
In district	2	3.2272	1.67	154
Off campus in individual county	3	4.7402	2.63	154
Field trips	4	5.5324	2.43	154
Short course presentations	5	5.5714	2.65	154
On campus workshops/seminars	6	6.5844	2.98	154
Videotape	7	6.8636	3.07	154
Annual Conference	8	7.4740	3.00	154
One-Net/Compressed video	9	8.9415	3.30	154
Oklahoma City	10	9.2532	2.81	154
Independent study	11	9.7207	3.39	154
On campus courses	12	11.1039	3.00	154
Slides	13	11.4415	1.82	154
Orientation	14	11.8051	3.13	154

CHAPTER V

SUMMARY, FINDINGS, AND RECOMMENDATIONS

Due to the rapid changes in technological innovations, extension educators are constantly challenged with the tasks of bringing their clientele up-to-date regarding information, skills, and competencies. Traditional methods for satisfying these needs have been widely used in in-service education. As a result of conducting this study, it was the intent of the researcher to determine the perceived educational needs for extension educators in the state of Oklahoma.

The intent of this chapter was to present the purpose and objectives of the study, as well as to summarize the rationale, design, methodology, and findings of the study. Ultimately, the conclusions and recommendations of the study were presented.

Problem Statement

Since the Extension staff development program is a part of the Department of Agriculture Education, Communication and 4-H Youth Development and funded by the Oklahoma Cooperative Extension Service there was a need to know what field staff perceived as their educational needs as

Extension professionals. It was determined, based upon identified priorities of Extension field staff, that applicable recommendations be shared with the Extension staff development office so appropriate decisions could be made concerning the need for in-service education of Extension professionals. Upon establishing extension field staff needs, specific in-service courses/topics could be determined pertaining to program areas in agricultural, home economics, youth development and rural development.

Rationale of the Study

The rapid development of science and technology has created an unique change in all sectors of society, such as clientele interests, perceptions, values, etc. This has brought about a new challenge to the linkage between the results of advanced scientific research, teaching and extension. To meet social demands of society, there was a need for Extension field staff to update their knowledge and competencies to better serve their various publics. As a result, it was deemed to be necessary to conduct research which would enable staff development specialists to determine course topics and issues which would be of most benefit to extension educators. In addition to identifying subject matter interest and needs of field staff, it was just as important in organizing quality in-service education programs to determine course delivery time, and course delivery methods concerning appropriate delivery of educational programming in order to conduct successful in-service education programs.

Purpose of the Study

The purpose of this study was to identify in-service education and staff development needs as perceived by the Oklahoma Cooperative Extension Services (OCES) Field Staff during the 1996-97 academic year.

Specific Objectives

The following objectives were developed in order to attain the purpose of this study:

1. To identify selected demographic characteristics of OCES Extension Field Staff.
2. To identify In-service education needs as perceived by OCES Extension Field Staff.
3. To determine priorities for in-service education needs as perceived by OCES Extension Field Staff.
4. To determine preferred in-service education delivery methods as perceived by OCES Extension Field Staff.
5. To determine the time preferred by OCES Extension Field Staff to receive In-service education.

Design of the Study

In order to gather information whereby every member of the OCES field staff had the opportunity to share their perceived needs and priorities for in-service education and satisfied the study objectives, delphi procedure was used. Ten Extension faculty from the Division of Agricultural Sciences and Natural Resources and the College of Human Environmental Sciences were selected to review the design and content of the three instruments developed by the researcher and the graduate committee and provide input with regard to appropriate changes in format and content.

Permission was granted by the Associate Director of Oklahoma Cooperative Extension Service, Dr. Ray Campbell, as well as the Department Head of Agricultural Education, Communication and 4-H Youth Development, Dr. James Leising, to conduct the study to determine the in-service education needs of OCES field staff. The instruments were carefully reviewed by Extension faculty and staff development specialists at Oklahoma State University.

As for the management of the investigation, the researcher collected the last instrument in the delphi study from the County/Unit Extension Directors during the last two weeks of November 1996. The final Instrument had 300 questions divided in to four major parts. Part one dealt with demographics of the population study, while part two concerned courses or topics for in-service education needs selected in the first instrument and prioritized during the second instrument. Every topic was characterized by priority as to the best

delivery method and the best delivery time Part three was designed to ascertain the most appropriate time for in-service education and the most appropriate delivery methods as a whole.

Study Population

The study population included 204 Cooperative Extension Service field staff in the state of Oklahoma, which included county extension directors (CED), extension agents in agriculture (AG) home economics (HE), and 4-H and youth development (4-H).

Data Analysis

Descriptive statistics were use for data analysis. The data was analyzed using frequencies, percentages weighted means, ranks, standard deviations and curve fitting procedures. The Statistical Analysis System (SAS) software package using a model PC P586 was utilized to treat the data.

Major Findings of the Study

The major summaries of the findings of the study were presented in four sections: demographics, course/topics priorities, most appropriate time for in-service and appropriate delivery methods for in-service education.

Demographics

The primary program area of responsibility of the respondents included 71 extension agents in agriculture, 64 educators in home economics and 19 youth agents in 4-H (Figure 12).

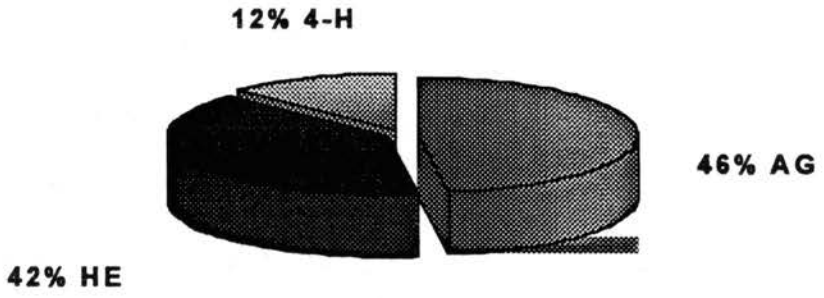

Figure 12. A Summary of Respondents by Area of Responsibility

The gender of the respondents included 97 males and 57 females (Figure 13).

Figure 13. A Summary of Respondents by Gender

The ethnic heritage included 134 Caucasians, 16 Native Americans, four African Americans and no Asians or Hispanics (Figure 14).

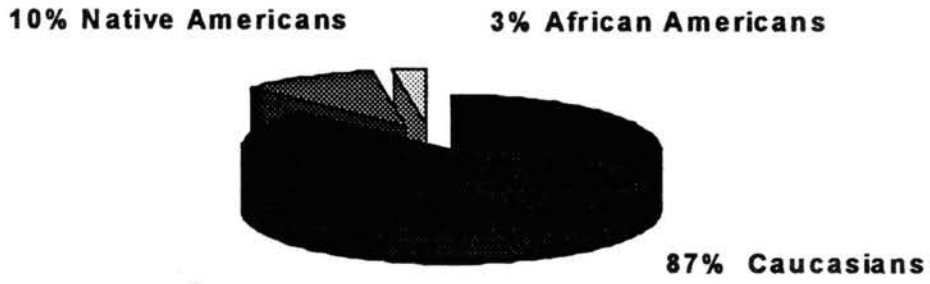

Figure 14. A Summary of Respondents by Ethnic Heritage

The mean age of the respondents was 39.18 years old with an age range of 23 to 59 years of age.

The average number of years of Extension experience of OCES field staff by current program area of responsibility was 9.57 years with a range of six months to 27 years.

The average among OCES field staff with regard to total years of Extension experience was 11.94 years with a range of six months to 31 years.

Considering the highest level of formal education, 97 Extension educators had earned a masters degree, 56 had bachelors of science degrees, while one was categorize as other and no participant held a doctoral degree (Figure 15).

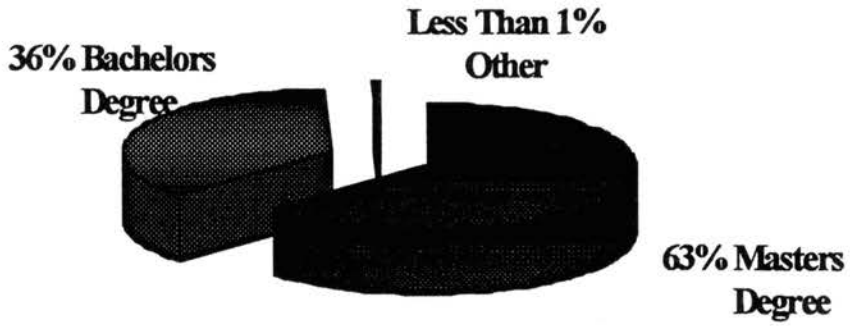

Figure 15. A Summary of Respondents by Level of Education

A total of 10 undergraduate major areas were represented by the respondents. These included 60 in agricultural education, 46 home economics, 23 animal science, five agricultural economics, five education, five horticulture, three business, two foods and nutrition, one agronomy and one religion (Figure 16).

The primary emphasis of graduate study was represented by 20 majors. These included 39 respondents in agricultural education, 24 education, 17 home economics, eight agricultural economics, seven animal science, six human development, five horticulture, four clothing, four consumer economics, three business administration, three counseling, three foods and nutrition, three family relations and child development, two agronomy, one administration, one adult education, one psychology and one range management (Figure 17).

The mean distribution of hours of graduate work completed was 33.24 with a range from two to 85 hours of study completed.

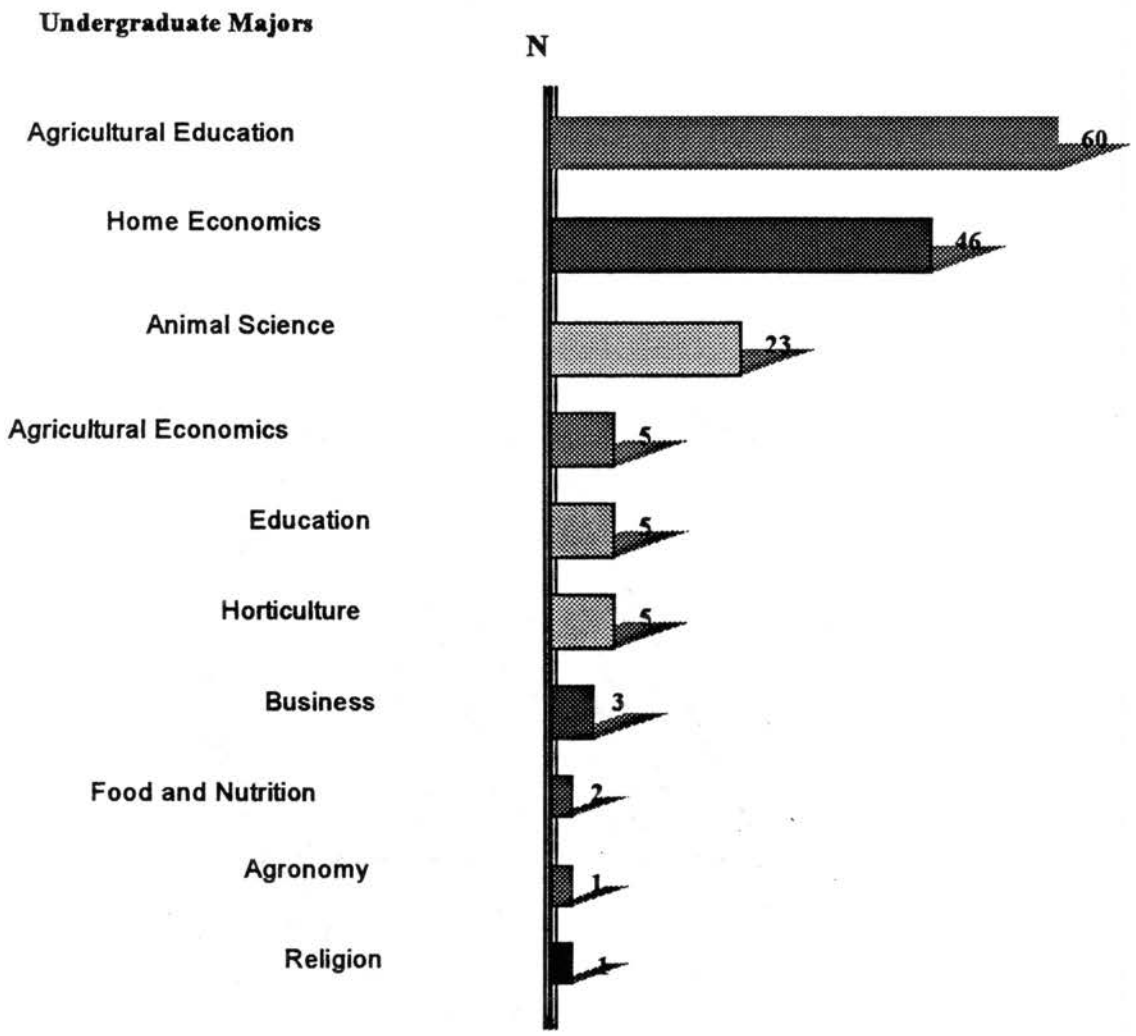

Figure 16. A Summary of Respondents by Undergraduate Major

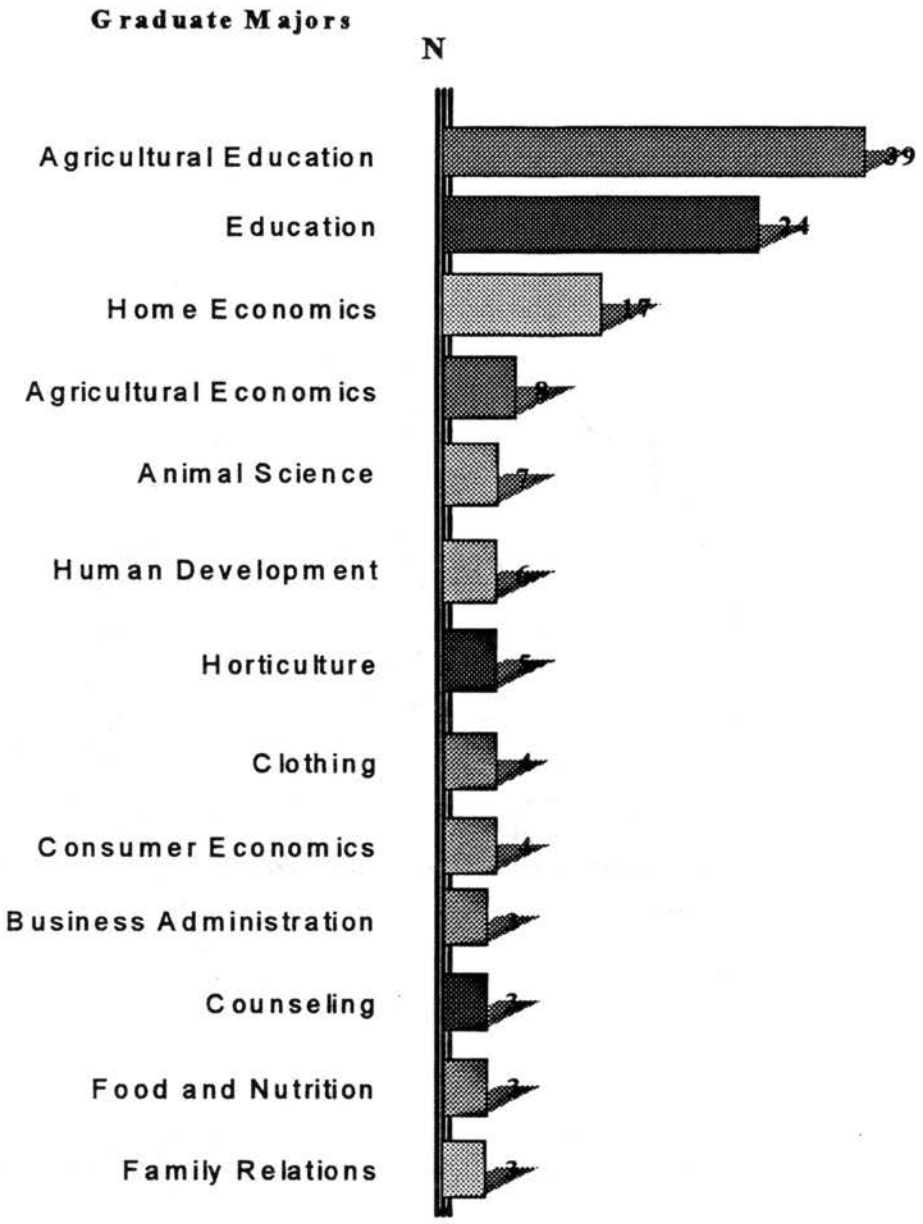

Figure 17. A Summary of Respondents by Graduate Major

Summary reasons for participating in in-service education/staff development opportunities revealed that 89 were pursuing advanced degrees, 49 expressed updating, 11 declared developing areas of new expertise, nine stated professional development, and three indicated personal development (Figure 18).

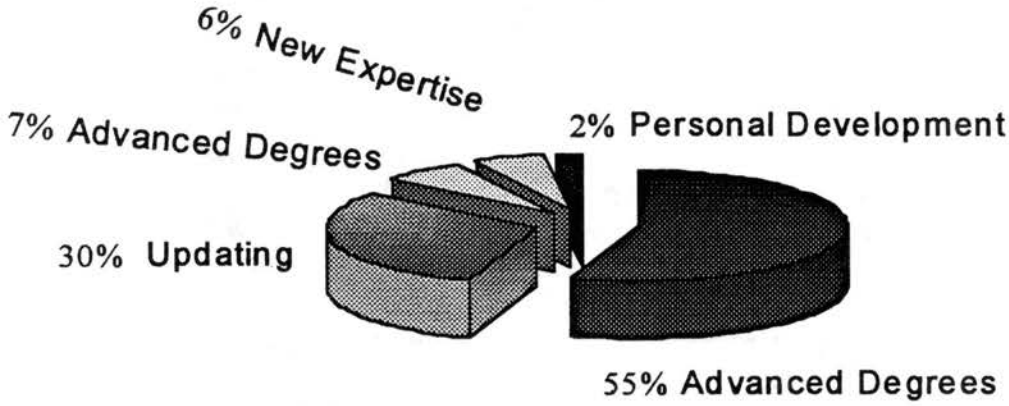

Figure 18. A Summary of Respondents Preferences as to Their Participatory Reasons

Courses or Topics

Nine sub-areas were identified. In the sub-area of "computers" five topics were identified, "horticulture" eight topics, "human environmental science" 16 topics, "production agriculture" 19 topics, "program administration" 15 topics, "program development" six topics, "rural development" two topics, "youth development" eight topics, and "others" included two topics.

Computers

"Internet use", "Computer technology (hardware)" and "Use of computer programs (databases, spread sheets)" were recognized as the three major priorities among extension educators. "Use of several computer programs" ranked as a fourth in importance with the lowest standard deviation witch implied the lowest variation among extension educators regarding its importance. The lowest priority was "Internet news letters" with the highest mean and standard deviation, which indicated considerable variation among respondents (Figure 19).

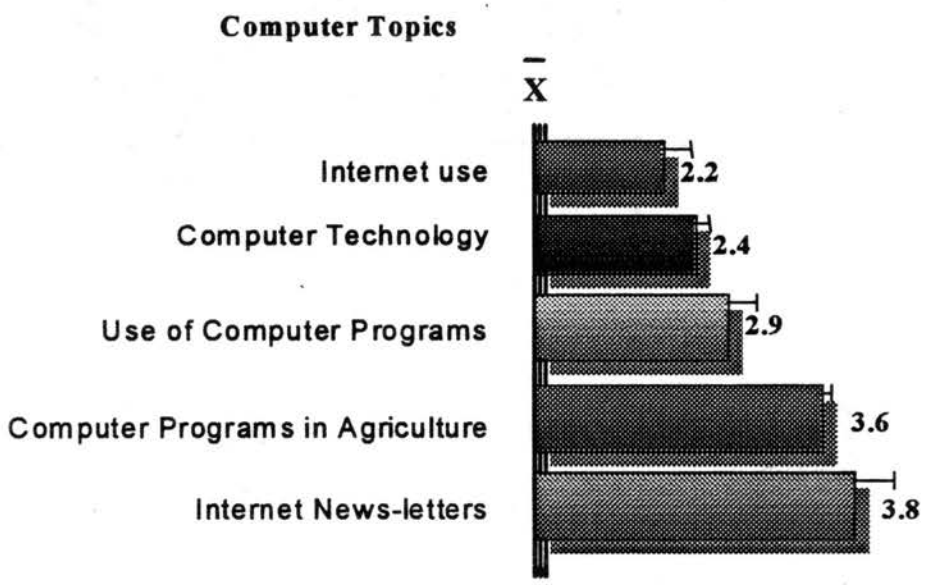

Figure 19. A Summary of Respondents Preferences Concerning Computer Topics (priority ranked)

Horticulture

Among the eight topics identified in this sub-area "General horticulture", "trees and shrubs", "Commercial fruit & nut production" had the highest priority and were ranked first, second and third, respectively. "Landscape plant selection update", "Home gardening & lawn", "Floriculture" and "Commercial vegetable production" were considered less of a priority, and "Water gardens" was ranked last among horticulture topics. A general profile of the standard deviations revealed little variation among the respondents with respect to Horticulture (Figure 20).

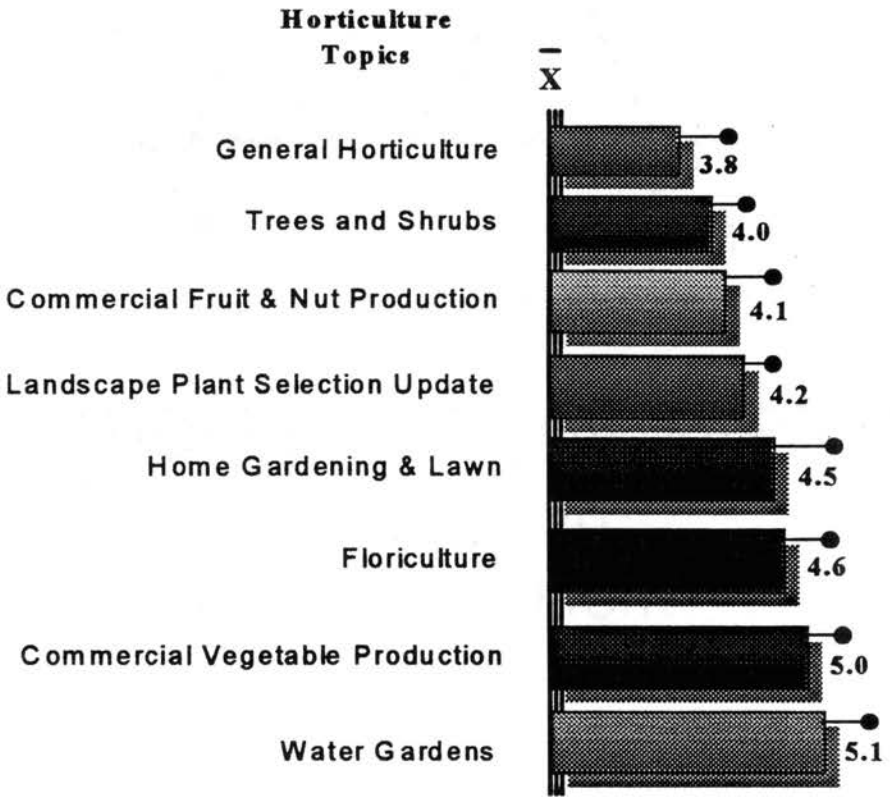

Figure 20. A Summary of Respondents Preferences Concerning Horticulture Topics (priority ranked)

Human Environmental Science

"Getting along with difficult people", "Parenting skills", "Stress management" were the top priority issues in human environmental sciences and were ranked first, second and third respectively. "Money management" was considered fourth, while "Physical fitness wellness (exercise and health)" was considered as the fifth most important, followed by "Foods and nutrition" and "Family living" which had the lowest standard deviation among all topics. The least important courses included topics "Parenting with risk parents or first time parents", "home base based business (overview), "Food preservation", "Housing", "Sewing" and "Sergers". "Extension teaching methods", "Telecommunications", and "Curriculum development" were the lowest ranked topics with the highest standard deviations (Figure 21).

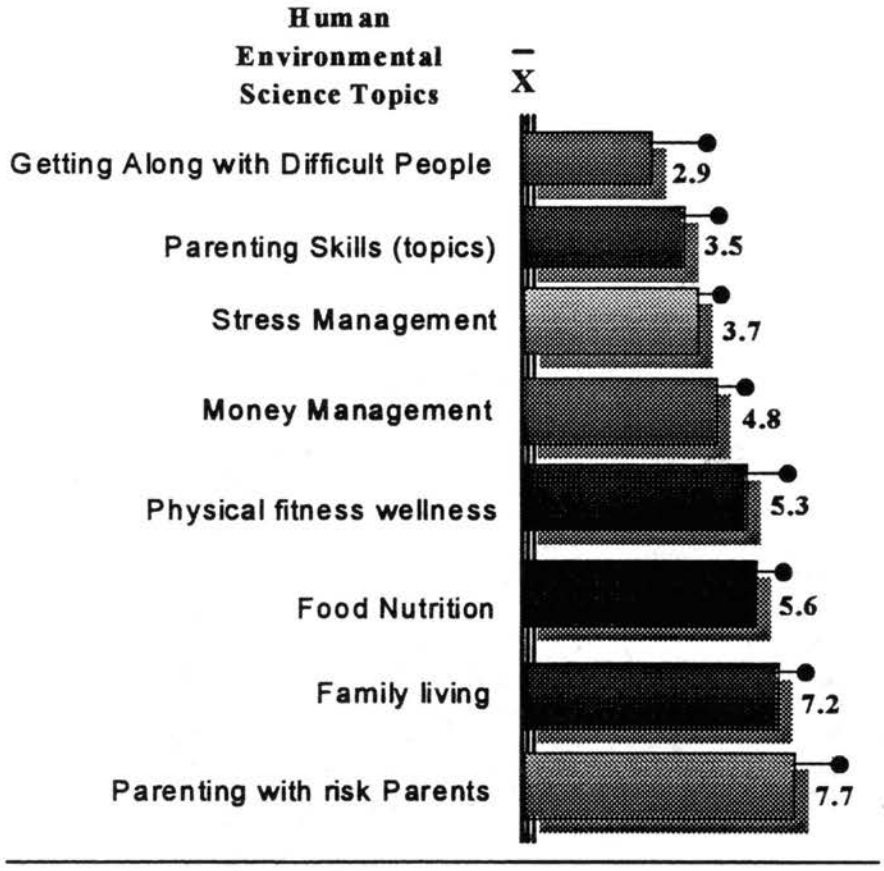

Figure 21. A Summary of Respondents Preferences Concerning Human Environmental Science Topics (priority ranked)

Production Agriculture

This area was represented by 19 courses/topics. The respondents ranked "Beef forages", "Fertilizers and herbicides", and "Beef production" as the three most important in-service education needs, while very little difference was revealed indicating that the respondents seemed to be in agreement regarding their rankings. "Weeds and brush control", Beef nutrition", Financial records",

"production agriculture" and "Farm management" were also considered important with mid-level rankings relative similar standard deviations which indicated agreement among respondents in regard to these perceived in-service topics. "Marketing products and commodities", "Plant problems and diagnosis methods", "Alternative agriculture enterprises", "Insect and disease resistance varieties" were ranked ninth, tenth, eleventh, and twelfth, respectively. "Wheat and Milo production", "Tillage and moisture conditions", Livestock judging", "IPM updates", "Dairy nutrition, total mix rations", "Grain grading" and "Ostrich production" were the least preferred issues/topics revealed. The small standard deviations further suggest a strong coherence among extension educators in regard to these issues as in-service education topics (Figure 22).

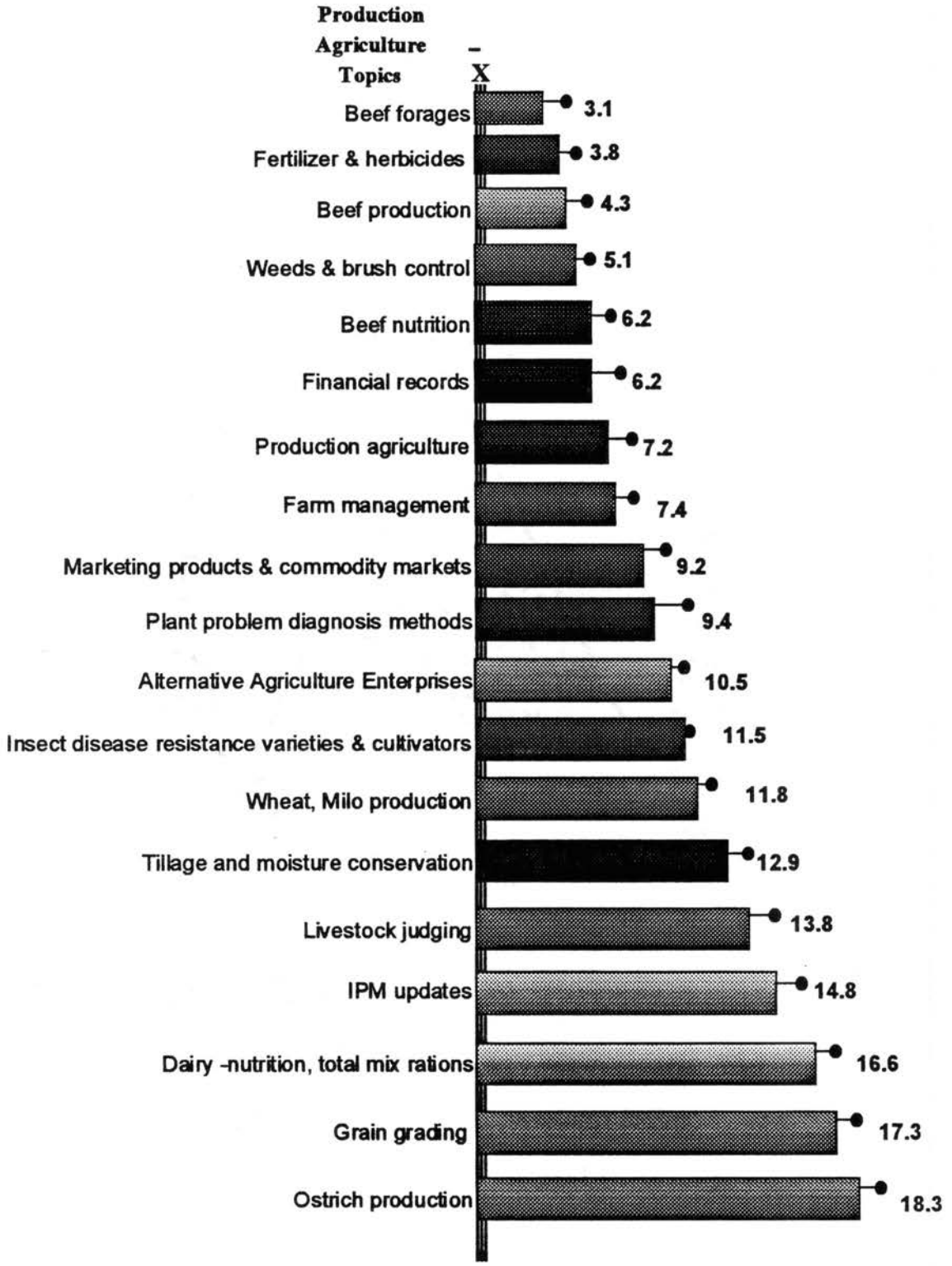

Figure 22. A Summary of Respondents Preferences Concerning Production Agriculture Topics (priority ranked)

Program Administration

"Motivation", "Balancing multiple assignments" and "time management" were identified as the three major priorities by extension educators with respect to program administration. In general, standard deviations in these three areas were also low, indicating strong agreement among extension educators in regard to the topics. "Management skills", "Marketing 4-H programs, recruitment and maintenance", "Employee benefits update", Counseling skills and techniques", "Supervisors skills and techniques", "Program evaluation" and "Human resource management skills" were also considered important and were ranked four through ten, respectively. "Delegation", "Supervision and management of paraprofessionals" and "key people in county officers to be trained" were the lowest ranked topics, and again the standard deviations revealed little variation which indicated strong agreement among the respondents (Figure 23).

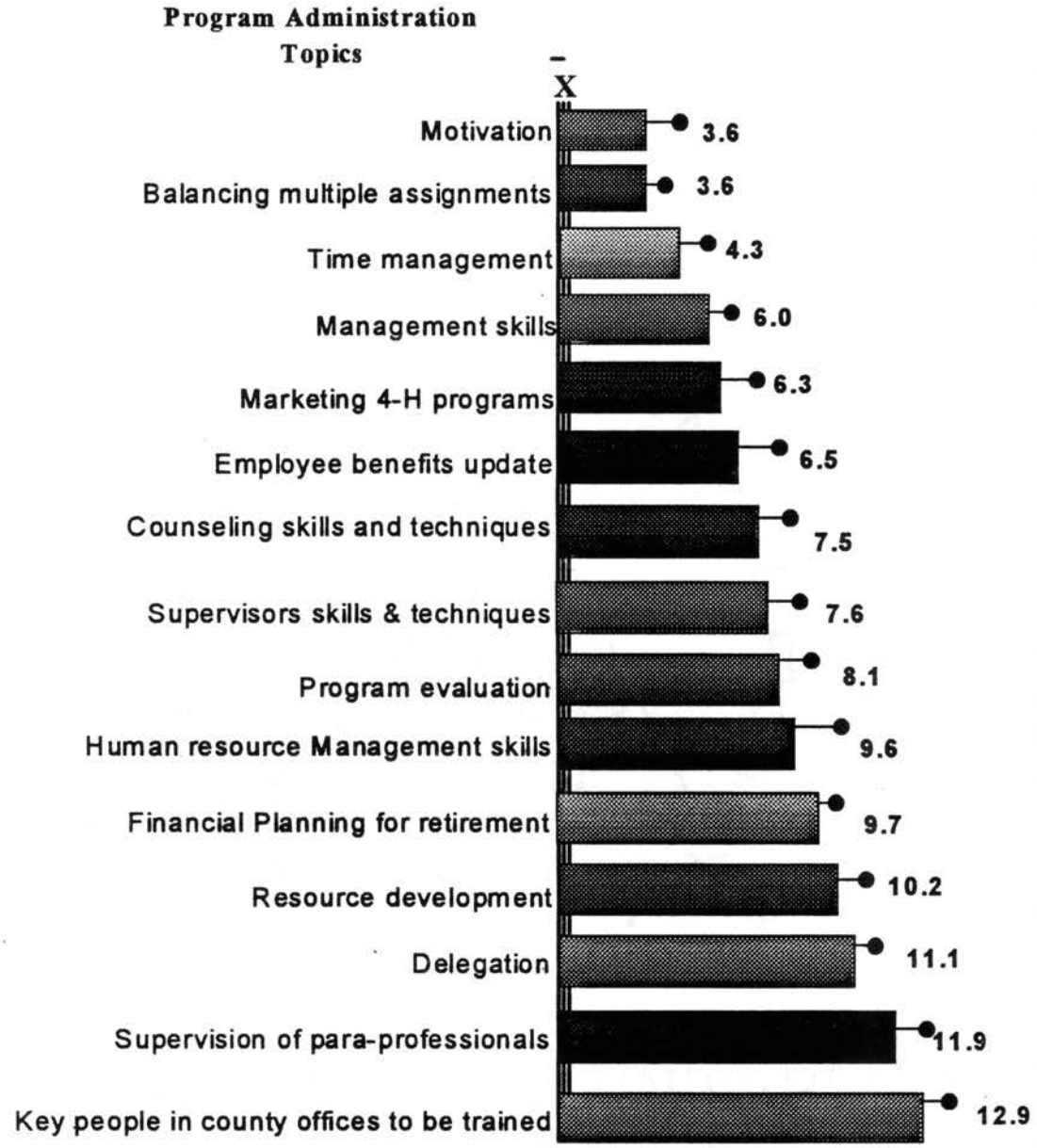

Figure 23. A Summary of Respondents Preferences Concerning Program Administration Topics (priority ranked)

Program Development

"Creative marketing for extension programs", "Grant writing opportunities outside extension", "Management of new and old programs in changing times" were the most needed topics in regard to program development. Again, in general, the standard deviations were low which indicated a solid preference to address such issues. By the same token "Networking outside extension", "County government" and "Marketing extension programs to an urban audience" were the least preferred in among program development issues (Figure 24).

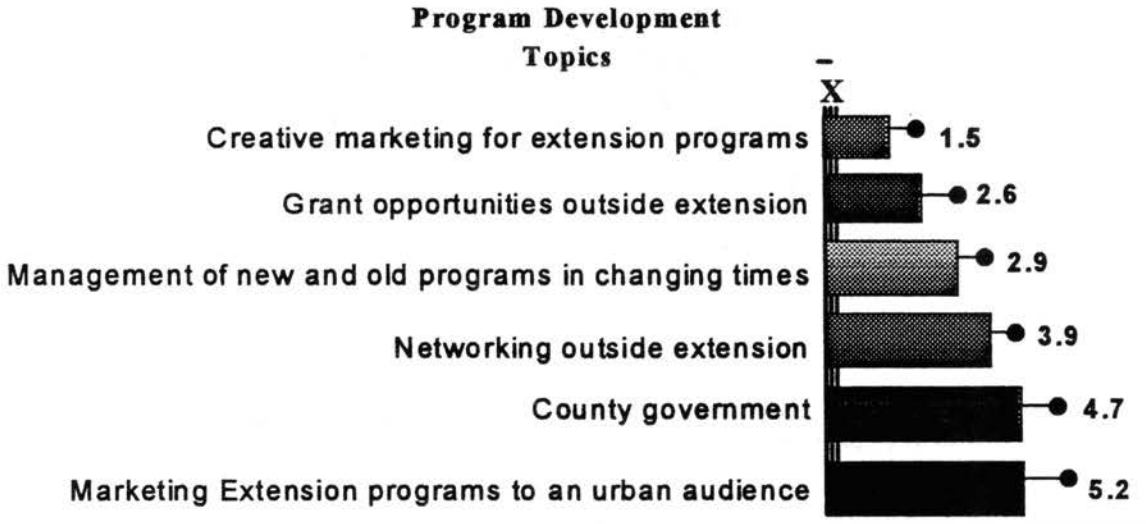

Figure 24. A Summary of Respondents Preferences Concerning Program Development Topics (priority ranked)

Rural Development

In regard to rural development, "Rural real estate issues (Water, fire protection)" were preferred over "Improve leisure for rural counties". Even though the two courses were different in ranking their mean scores indicated little notable difference, while standard deviations also revealed little variation (Figure 25).

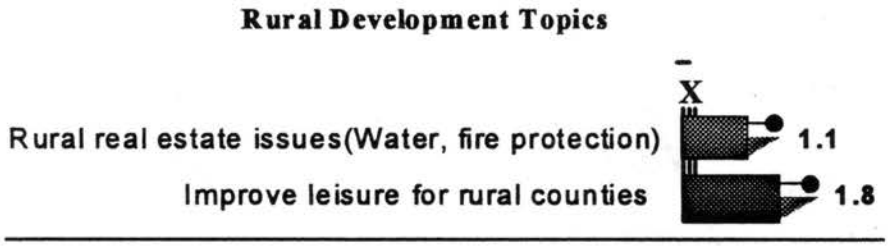

Figure 25. A Summary of Respondents Preferences Concerning Rural Development Topics (priority ranked)

Youth Development

"4-H programs (leadership, citizenship, empowerment, on-trac)", "Fun educational programs and ideas for 9-15 yr. olds", and "Recruiting and working with volunteers" (volunteer development) were considered the three areas needing the most attention in the area of youth development with regard to in-service training. Little difference was observed among the standard deviations, which indicated that respondents seemed to be thinking along the same lines concerning this issue. "Building self-esteem", "How to present school

enrichment" and "Youth at risk topics (Ages 1-5 yr. old) had the lowest preference among the eight issues/topics identified for the sub-area, also low standard deviations were found which indicated strong agreement concerning the respondents' rankings (Figure 26).

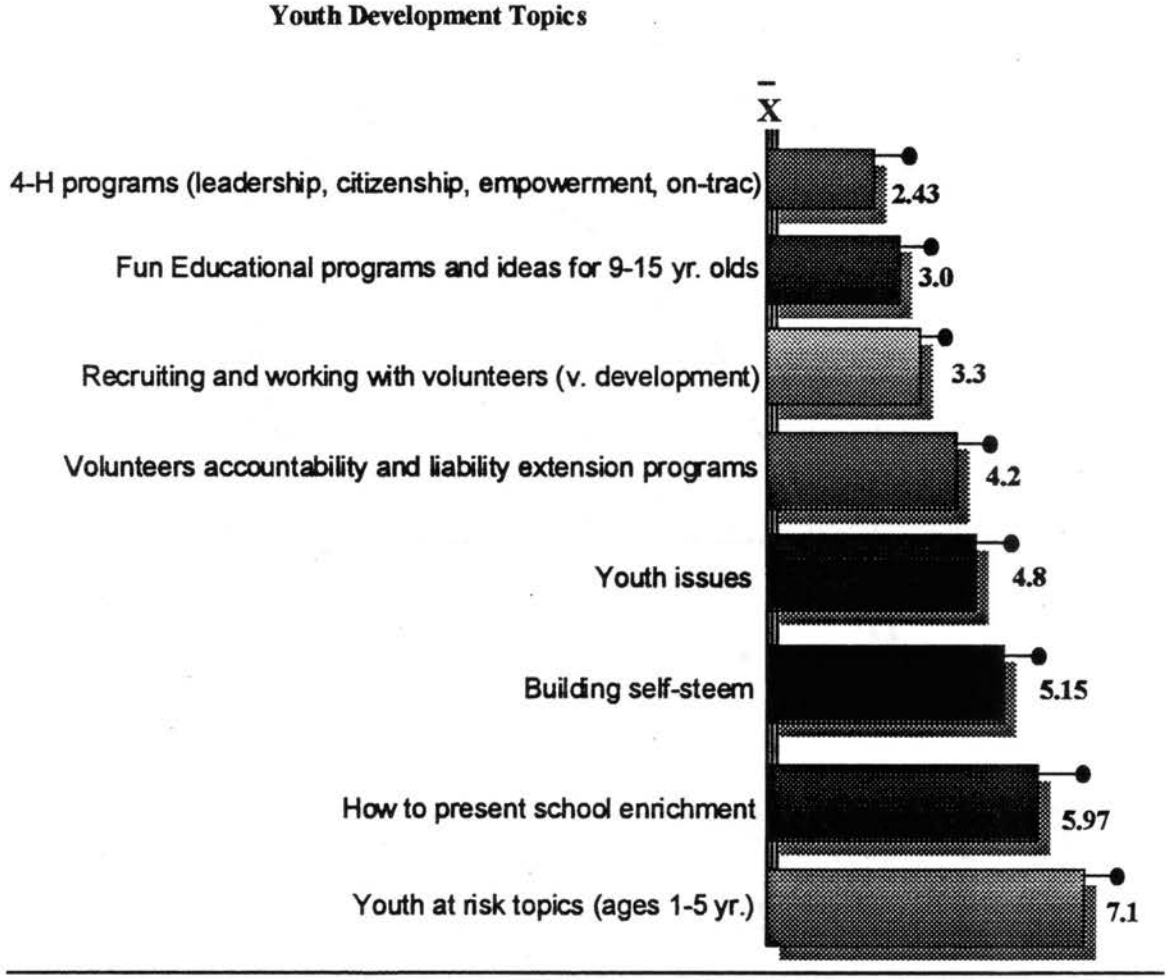

Figure 26. A Summary of Respondents Preferences Concerning Youth Development Topics (priority ranked)

Other

With respect to other courses or "More masters courses in areas other than Agricultural Education" was favored over "Wildlife management", even though the two courses were rather close with regard to observable mean scores. Their standard deviations were similar (Figure 27).

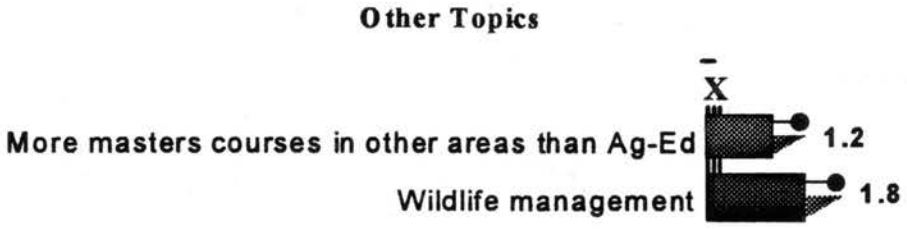

Figure 27. A Summary of Respondents Preferences Concerning Other Topics (priority ranked)

Most Appropriate Delivery Time

"Day time during the week", "In-service" and "January, February and December" were the most preferred times for in-service education/staff development. These priority preferences were followed by "Time to work it in", "Winter inter-session", "Summer sessions", "Compressed semester schedule", "April (Planting season)", and "Fall session". The last three preferred time-frames for in-service delivery were "October(Harvest)", "Evenings" and

'Weekends". Standard deviations were small which indicating agreement among the respondents concerning the mean scores relative to these course delivery times (Figure 28).

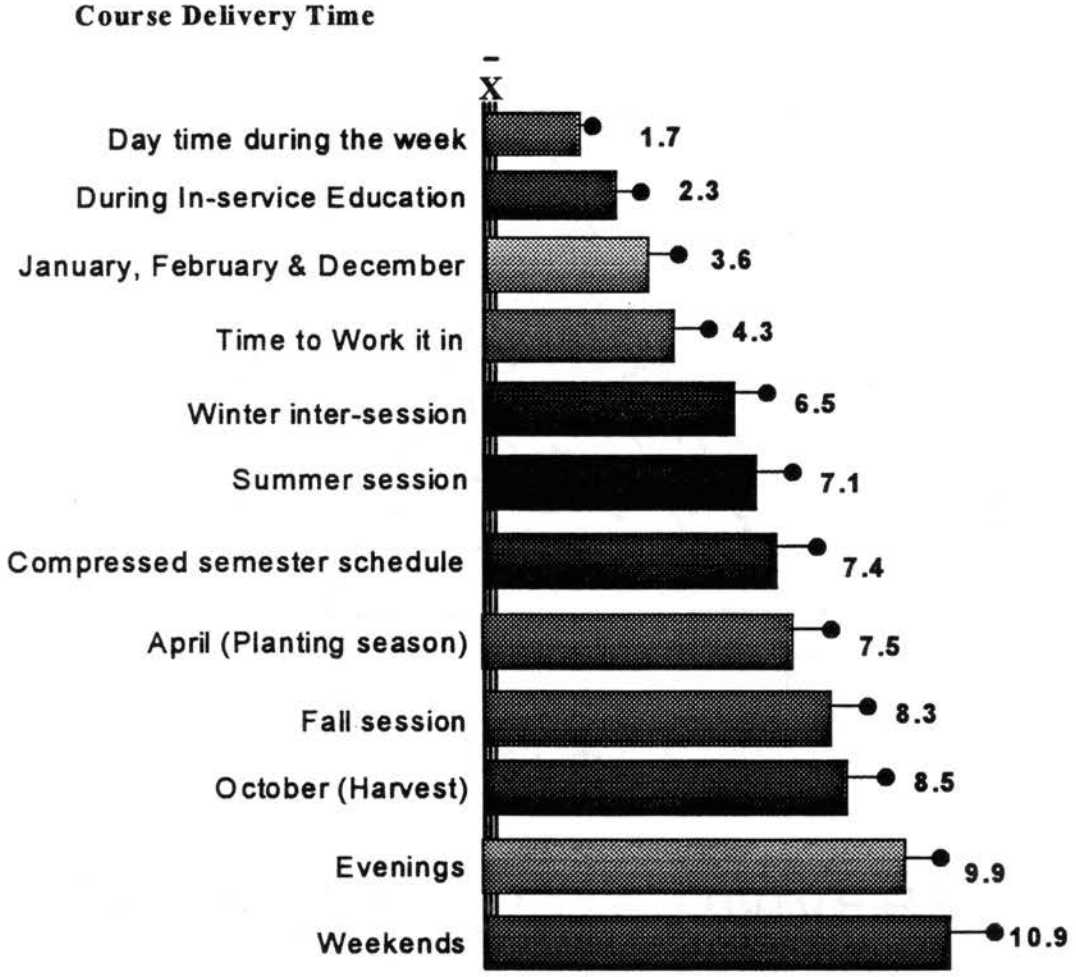

Figure 28. A Summary of Respondents Preferences Concerning Most Appropriate Delivery Time (priority ranked)

Most Appropriate Delivery Method

"Hands on", In-district" and "Off campus in individual counties" were identified as the three major priorities by extension educators with respect to best delivery method. "Hands on" in addition to being most preferred course delivery method also had the lowest standard deviation indicating a fairly high level of agreement as perceived by the study respondents. Following the top three rankings were "Field trips", "Short presentations", "On campus workshops/seminars", "Videotape", "Annual conference", "One-net\compressed video", "Oklahoma City" and "Independent study". The three least desired delivery methods according to the 154 respondents were "On campus courses", "Slides", and "Orientation" (Figure 29).

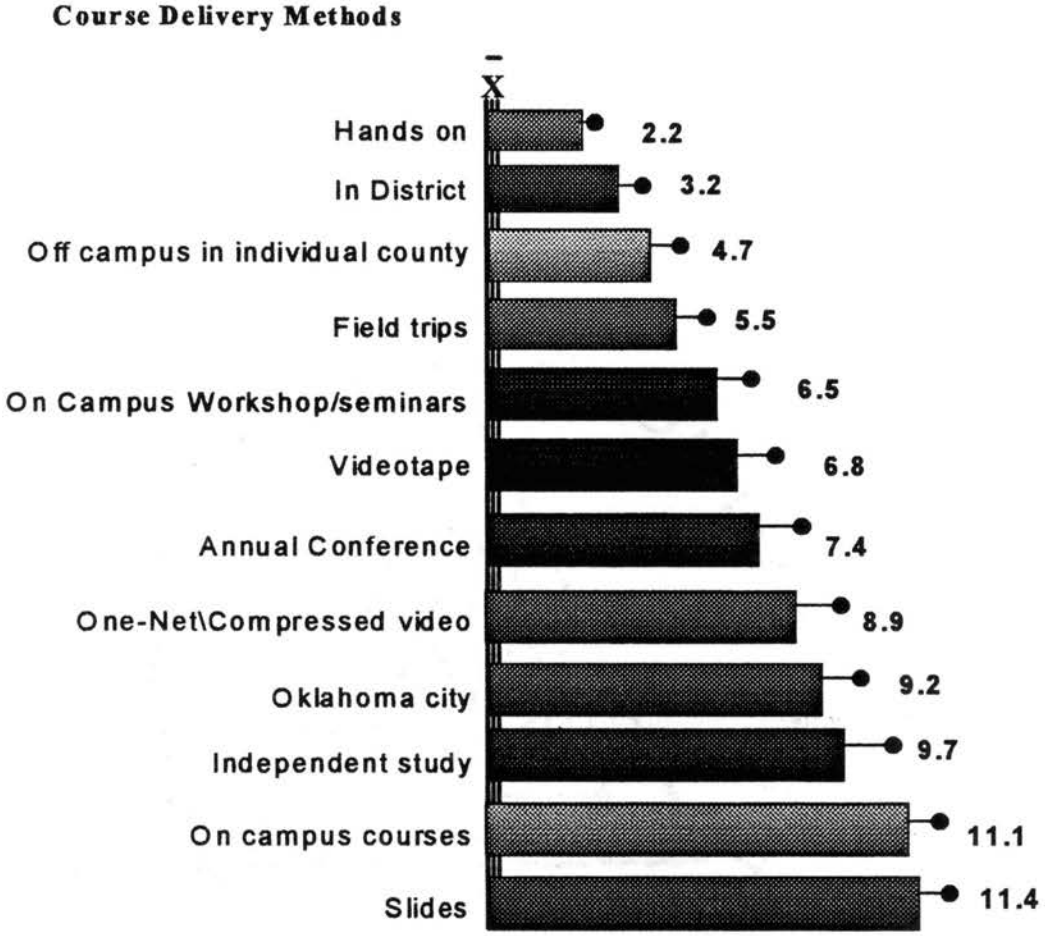

Figure 29. A Summary of Respondents Preferences Concerning Most Appropriate Delivery Method (priority ranked)

Conclusions

From the assessment and interpretation of the data, the following conclusions were established:

1. The findings of the study inferred that the typical Extension educator in the state of Oklahoma was male, Caucasian, and in their late 30s.
2. Furthermore, it was also inferred that the typical OCES field staff representative in Oklahoma had nine years of experience in their current program area of responsibility and 12 years of total extension experience
3. Furthermore, the findings were rather convincing that the typical OCES Extension educator in the state held a masters degree with the primary emphasis of their graduate education being agricultural education or home economics.
4. Essentially OCES Extension educators see the need for in-service education primarily for the purpose of pursuing an "advanced degree".
5. OCES field staff seemed to have a particular preference relative to topics, which should be emphasized to contribute to the further development of their technical skills in the programs for which they have a current responsibility.
6. It was concluded that OCES field staff perceived the in-service area of greatest need seemed to be the development of computer skills.
7. Within the major area of the horticulture, the field staff seemed rather adamant concerning "General Horticulture" being an in-service priority.

8. The field staff seemed to perceive that society changes were mandating the need for in-service education in "Getting along with difficult people".
9. The findings indicated "Beef forages" were a popular topic within the major agriculture area of production agriculture, therefore it was concluded that agricultural field staff are perceiving the need to be able demonstrate the effective use of resources for local producers in the production of quality forage in their beef cattle operations.
10. Within the major area of program administration, "Motivation" seems to have captured the imagination of the field staff resulting in a perceived need as an in-service education issue for them to assure and encourage clientele and volunteers in diverse operations and pursuits.
11. "Creative marketing for Extension programs" has been a priority of state Extension staff for some time, now it is finally being recognized by the OCES field staff as an important in-service education issue to assist them in doing a better job of marketing educational programs at the county level.
12. The 4-H program within the broad area of youth development was seen as a priority area by OCES field staff.
13. Based on the findings it was readily apparent that the field staff has a definite perceived need for in-service course offerings in subject matter areas other than agricultural education.
14. It was conclusive that OCES field staff prefer "hands on" learning as the primary teaching method for in-service education and staff development activities.

15. Furthermore, as evident from the major findings that the OCES field staff prefer "Day time during the week" as the time-frame for conducting in-service education and staff development activities.

Recommendations

Based on the conclusions, the following recommendations were presented:

1. It was evident from the major findings that the OCES field staff preferred "hands-on" learning as the primary teaching/learning method for in-service education and staff development activities; therefore Oklahoma State University faculty and Extension specialists need to make a definite effort to develop materials and activities which utilize the advantages of experiential learning.
2. OCES Extension program leaders, coordinators, and staff development specialists should take into consideration the time-frame preference of the field staff for in-service education and make an effort to provide opportunities for professional development during the regular work day work week period.
3. In planning future in-service education staff development programs it is imperative that other departments within the Division of Agricultural Science and Natural Resources, become involved in offering formal in-service educational opportunities for OCES field staff pursuing advanced degrees.

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APPENDIXES

APPENDIX A

FIRST LETTERS AND QUESTIONNAIRE

Oklahoma Cooperative Extension Service
Division of Agricultural Sciences and Natural Resources
Oklahoma State University

Office of the Dean and Director • 139 Agricultural Hall
Stillwater, Oklahoma 74078-0500 • (405) 744-5398 • FAX (405) 744-5339

June 26, 1996

Dear Extension Educator:

We are initiating the process of conducting an assessment of in-service education needs for Cooperative Extension field staff in Oklahoma. The purpose of this study is to determine the most urgent needs concerning training and staff development as perceived by Extension field staff. The outcome of this research will provide documentation for the improvement of Extension programs and staff development /in-service education. The first stage of the survey will consist of utilizing the Delphi technique to conduct an assessment of your in-service needs. The second stage will consist of refining and clarifying your responses from the initial instrument. However, the third and final stage will consist of determining the importance and ranking your priorities concerning perceived needs.

Your participation will be held in strict confidence. Responses will only be reported in the aggregate to maintain the confidentiality of study respondents and expedite reporting results. However, a numerical code has been assigned to each potential participant to assist us in identifying non-respondents for follow-up purposes.

Please take 15 to 20 minutes to complete the enclosed survey so that Extension personnel responsible for staff development can assist you and your colleagues in doing the best job possible in meeting your in-service needs. After completing the survey, please return it to Mario Villaquiran, 448 AG Hall Stillwater, OK 74078 or to your CED/UED in order for him/her to return all questionnaires from your county by Monday, July 8.

Thank you for participation and support.

Respectfully,

Mario Villaquiran P.
Graduate Assistant

James D. White
Professor and Thesis Adviser

Fred H. Rayfield, Jr.
Volunteer and Staff
Development Specialist

James G. Leising
Professor and Head

Raymond E. Campbell
Associate Director
Oklahoma Cooperative Extension Service

CC: District Directors

Oklahoma Cooperative Extension Service
Division of Agricultural Sciences and Natural Resources
Oklahoma State University

Office of the Dean and Director • 139 Agricultural Hall
Stillwater, Oklahoma 74078-0500 • (405) 744-5398 • FAX (405) 744-5339

June 26, 1996

Dear

We are initiating the process of conducting an assessment of in-service education needs for Cooperative Extension field staff in Oklahoma. The purpose of this study is to determine the most urgent needs concerning training and staff development as perceived by Extension field staff. The outcome of this research will provide documentation for the improvement of Extension programs and staff development /in-service education. The first stage of the survey will consist of utilizing the Delphi technique to conduct an assessment of your in-service needs. The second stage will consist of refining and clarifying your responses from the initial instrument. However, the third and final stage will consist of determining the importance and ranking your priorities concerning perceived needs.

The focus of this study is to provide all Extension field staff members an opportunity to share their ideas and to express their main priorities for future in-service training.

Since direct contact with every Extension educator is not possible, we are asking you as the County Extension Director to assist us in emphasizing the importance of this study in your weekly staff meetings by stressing the necessity of documenting in-service education needs through completion of this survey. Also, we would be most appreciative of your efforts in distributing the surveys to your staff and getting them back to us in the enclosed pre-addressed envelope by Monday, July 8.

Again, we appreciate your support and cooperation in this effort to improve staff development and in-service opportunities for Extension professionals in Oklahoma.

Respectfully,

Mario Villaquiran P.
Graduate Assistant

James D. White
Professor and Thesis Adviser

Fred H. Rayfield, Jr.
Volunteer and Staff
Development Specialist

James G. Leising
Professor and Head

Raymond E. Campbell
Associate Director
Oklahoma Cooperative Extension Service

CC: District Directors

IN-SERVICE EDUCATION SURVEY OF EXTENSION PROFESSIONALS

What are your **In-service Education and Staff Development Needs?**

Courses/Topics, Delivery Methods, Best Times to be Offered, etc.

Please be as specific as possible. If additional space is needed, please use the back side.

Courses or Topics?

e.g. Vegetable Production, Extension Teaching Methods, Communications, Family Living, Youth at Risk, Stress Management etc.

Delivery Methods?

e.g. Orientation, One-Net\Compressed video, Annual Conference, In District, videotape, On Campus workshops/seminars, On campus courses, etc.

Best Times to be Offered?

e.g. Evenings, Weekends, Winter Inter-Session, Summer Session, Compressed Semester Schedule, etc.

Your Area(s) of Responsibility: AG☐ HE☐ 4-H☐ RD☐
CED☐ District Staff☐ Area Specialist☐

APPENDIX B

SECOND LETTERS AND QUESTIONNAIRE

July 30, 1996

Dear Extension Educator:

These are the results from the first stage of the Delphi study in regard to the responses concerning your in-service education needs. They are divided into categories for easy identification. For this second stage, please rate your priorities as high or low (on a scale of 1 to 4) by marking your priority of the selected topics identified by OCES field staff. Your input is extremely important to the success of the final instrument. Your response will help us to determine the most pressing needs and priorities concerning in-service education for Extension professionals such as yourself.

Again, your participation will be held in strict confidence. Responses will only be reported in the aggregate to maintain the confidentiality of study respondents and expedite reporting results. However, a numerical code has been assigned to each potential participant to assist us in identifying non-respondents for follow-up purposes.

After completing the survey, **please return to Mario Villaquiran**, 448 AG Hall Stillwater, OK 74078 **or to your CED/UED** in order for him/her to return all questionnaires from your county by **Monday, August 12**.

Thank you for participation and support.

Respectfully,

Mario Villaquiran P.
Graduate Assistant

James D. White
Professor and Thesis Adviser

Fred H. Rayfield, Jr.
Volunteer and Staff
Development Specialist

James G. Leising
Professor and Head

Raymond E. Campbell
Associate Director
Oklahoma Cooperative Extension Service

CC: District Directors

July 30, 1996

Dear

We are now in the second stage of identifying your priorities for in-service education. As you see from the initial results, we are dividing your responses into categories for easy identification. Our major concern now is to rate the priority topics identified by you and other members of the OCES field staff as a high or low priority (1 to 4). The outcome of this part of the process will provide documentation for the final instrument. Your response will help us determine the most pressing in-service needs. Remember, the focus of this study is to provide all Extension educators an opportunity to share their ideas and to express their personal priorities for future in-service training.

We are most appreciative of your assistance in the first stage of this effort. Now, we would appreciate your help again in distributing the second survey to your staff and getting them back to us in the enclosed pre-addressed envelope by **Monday, August 12**.

Again, we appreciate your support and cooperation in this effort to improve staff development and in-service opportunities for Extension professionals in Oklahoma.

Respectfully,

Mario Villaquiran P.
Graduate Assistant

James D. White
Professor and Thesis Adviser

Fred H. Rayfield, Jr.
Volunteer and Staff Development Specialist

James G. Leising
Professor and Head

Raymond E. Campbell
Associate Director
Oklahoma Cooperative Extension Service

CC: District Directors

In-service Education Survey for Extension Educators

(Second stage)

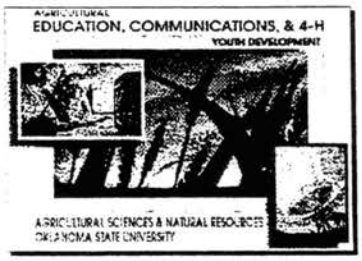
Directions: Please circle your rating (1,2,3,or 4) for each identified topic within each of the major categories.

	Priority			
Computers	High			Low
1 Computer technology (hardware)	1	2	3	4
2 **Internet use**	1	2	3	4
3 Internet news-letters	1	2	3	4
4 **Use of computer programs (databases, spread sheets)**	1	2	3	4
5 Use of several computer programs in agriculture	1	2	3	4
Horticulture				
1 Commercial fruit & nut production	1	2	3	4
2 **Commercial vegetable production**	1	2	3	4
3 Floriculture	1	2	3	4
4 **General horticulture**	1	2	3	4
5 Home gardening & lawn	1	2	3	4
6 **Landscape plant selection update**	1	2	3	4
7 Trees and shrubs	1	2	3	4
8 **Water gardens**	1	2	3	4
Human Environmental Science				
1 Family living	1	2	3	4
2 **Food Nutrition**	1	2	3	4
3 Food preservation	1	2	3	4
4 **Getting along with difficult people**	1	2	3	4
5 Home base based business (overview)	1	2	3	4
6 **Home base based business (overview)**	1	2	3	4
7 Housing (Interior & surfaces)	1	2	3	4
8 **Money management**	1	2	3	4
9 Parenting skills (topics)	1	2	3	4
10 **Parenting with risk parents or first time parents**	1	2	3	4
11 Physical fitness wellness (exercise and health)	1	2	3	4
12 **Sergers**	1	2	3	4
13 Sewing	1	2	3	4
14 **Stress management**	1	2	3	4
Information Transfer				
1 Communications	1	2	3	4
2 **Curriculum development**	1	2	3	4
3 Extension teaching methods	1	2	3	4
4 **Telecommunications**	1	2	3	4
Production Agriculture				
1 Alternative Agriculture Enterprises	1	2	3	4
2 **Beef forages**	1	2	3	4
3 Beef nutrition	1	2	3	4
4 **Beef production**	1	2	3	4
5 Dairy -nutrition, total mix rations	1	2	3	4
6 **Farm management**	1	2	3	4
7 Fertilizer & herbicides	1	2	3	4
8 **Financial records**	1	2	3	4

(Continued on Back)

	Priority			
Production Agriculture (continued)	High			Low
9 Goat Production	1	2	3	4
10 **Grain grading**	1	2	3	4
11 Insect disease resistance varieties & cultivators	1	2	3	4
12 **IPM updates**	1	2	3	4
13 Livestock judging	1	2	3	4
14 **Marketing products & commodity markets**	1	2	3	4
15 Ostrich production	1	2	3	4
16 **Plant problem diagnosis methods (Plant pathology)**	1	2	3	4
17 Production agriculture	1	2	3	4
18 **Tillage and moisture conservation**	1	2	3	4
19 Weeds & brush control	1	2	3	4
20 **Wheat, Milo production**	1	2	3	4
Program Administration				
1 Balancing multiple assignments	1	2	3	4
2 **Counseling skills and techniques**	1	2	3	4
3 Delegation	1	2	3	4
4 **Employee benefits update**	1	2	3	4
5 Financial Planning for retirement	1	2	3	4
6 **Human resource Management skills**	1	2	3	4
7 Key people in county offices to be trained	1	2	3	4
8 **Management skills**	1	2	3	4
9 Marketing 4-h programs, recruitment and maintaining	1	2	3	4
10 **Motivation**	1	2	3	4
11 Program evaluation	1	2	3	4
12 **Quality control**	1	2	3	4
13 Resource development	1	2	3	4
14 **Supervision & management of para-professionals**	1	2	3	4
15 Supervisors skills & techniques	1	2	3	4
16 **Time management**	1	2	3	4
Program Development				
1 County government	1	2	3	4
2 **Creative marketing for extension programs**	1	2	3	4
3 Grant opportunities outside extension (grant writing)	1	2	3	4
4 **Management of new and old programs in changing times**	1	2	3	4
5 Marketing Extension programs to an urban audience	1	2	3	4
6 **Networking outside extension**	1	2	3	4
Rural Development				
1 Improve leisure for rural counties	1	2	3	4
2 **Rural real estate issues(Water, fire protection)**	1	2	3	4
Youth Development				
1 4-h programs (leadership, citizenship, empowerment, on-trac)	1	2	3	4
2 **Building self-steem**	1	2	3	4
3 Fair projects(leaf exhibit, insect collection)	1	2	3	4
4 **Fun Educational programs and ideas for 9-15 yr. olds**	1	2	3	4
5 How to present school enrichment	1	2	3	4
6 **Recruiting and working with volunteers (v. development)**	1	2	3	4
7 Volunteers accountability and liability extension programs	1	2	3	4
8 **Youth at risk topics (ages 1-5 yr.)**	1	2	3	4
9 Youth issues	1	2	3	4

	Priority
Other	High ► Low
1 More masters courses in other areas than Ag-Ed	1 2 3 4
2 **Wildlife management**	**1 2 3 4**
Delivery Methods	
1 Annual Conference	1 2 3 4
2 **Field trips**	**1 2 3 4**
3 Hands on	1 2 3 4
4 **In District**	**1 2 3 4**
5 Independent study	1 2 3 4
6 **Off campus in individual counties**	**1 2 3 4**
7 OK city	1 2 3 4
8 **On campus courses**	**1 2 3 4**
9 On Campus Workshop/seminars	1 2 3 4
10 **One-Net\Compressed video**	**1 2 3 4**
11 Orientation	1 2 3 4
12 **Short presentations**	**1 2 3 4**
13 Slides	1 2 3 4
14 **Videotape**	**1 2 3 4**
Best Times to be Offered	
1 April (Planting season)	1 2 3 4
2 **Compressed semester schedule**	**1 2 3 4**
3 Day time during the week	1 2 3 4
4 **Evenings**	**1 2 3 4**
5 Fall session	1 2 3 4
6 **In-services**	**1 2 3 4**
7 January, February & December	1 2 3 4
8 **October (Harvest)**	**1 2 3 4**
9 Summer session	1 2 3 4
10 **Time to Work it in**	**1 2 3 4**
11 Weekends	1 2 3 4
12 **Winter inter-session**	**1 2 3 4**



APPENDIX C

THIRD LETTER AND QUESTIONNAIRE

September 12, 1996

Thanks once again for your full cooperation on this study. We are now in the final stage of identifying your priorities for in-service education. The first part of the instrument is a profile of Extension educators' demographics. The field staff profile will allow us to focus the most appropriate statistical treatment by specific areas of responsibility. In parts II, III and IV, we are using the results from your responses on the second instrument by listing each topic under specific sub areas according to your priorities. Our major concern now is to identify your priorities by ranking each of the sub-areas independently. Your participation will help us determine the most pressing in-service education needs. Remember, the focus of this study is to provide all Extension educators an opportunity to share their ideas and express their priorities for future in-service training.

Again, your responses will be kept strictly confidential; data from a specific county or individual will not be able to be identified in the study.

We are most appreciative of your cooperation and participation in the first and second stages of this effort. We would appreciate your help in completing this final portion of the study. Please distribute the surveys to your staff and return them to us in the enclosed pre-addressed envelope by Monday, September 30. Thank you.

Respectfully,

Mario Villaquiran P.
Graduate Assistant

James D. White
Professor and Thesis Adviser

Fred H. Rayfield, Jr.
Volunteer and Staff
Development Specialist

James G. Leising
Professor and Head

Raymond E. Campbell
Associate Director
Oklahoma Cooperative Extension Service

CC: District Directors

Dear Extension Educator:

Please find the results (includes your responses) of the second phase of our Delphi study concerning in-service education and staff development needs for Extension field staff in Oklahoma. Now we are returning your ideas in order of importance for the purpose of identifying your final priorities. Please complete this survey as soon as possible. Indicate your needs and priorities so appropriate decisions can be made concerning the next stage in the staff development process. After completing the survey, **please return to Mario Villaquiran**, 448 AG Hall Stillwater, OK 74078 **or to your CED/UED** in order for him/her to return all questionnaires from your county by Monday, September 30.

We are most appreciative of your assistance and cooperation. Thanks.

Respectfully,

Mario P. Villaquiran
Graduate Student, Department of Agricultural Education.

James D. White
Thesis adviser, Department of Agricultural Education.

Fred H. Rayfield, Jr.
Volunteer and Staff Development Specialist

Raymond E. Campbell
Associate Director, Oklahoma Cooperative Extension Service

James G. Leising
Professor and Head, Department of Agricultural Education.

SURVEY OF OCES FIELD STAFF IN OKLAHOMA

Oklahoma state University Department of Agricultural Education, Communications and 4-H Youth Development

Fall 1996

Instructions: The following demographics are a part of our research study. Please circle or check the most appropriate response as it applies to you.

Part I. DEMOGRAPHIC INFORMATION

1. Primary Program area of Responsibility:

1 ☐ AG
2 ☐ HE
3 ☐ RD
4 ☐ 4-H
5 ☐ CED
6 ☐ District Staff
7 ☐ Area Specialist

2. Gender:

1 ☐ Male
2 ☐ Female

3. Ethnic Heritage:

1 ☐ African American
2 ☐ Hispanic
3 ☐ Asian
4 ☐ Native American
5 ☐ Caucasian

4. Year in Which you Were Born:

19 ____

5. Years of Extension Experience: in current Program Area of Responsibility

____ yrs

6. Years of Extension Experience

____ yrs

7. Highest Level of Formal Education

1 ☐ BS
2 ☐ MS
3 ☐ Doctorate
4 ☐ Other: (*Specify*) _____

8. Major Area of Undergraduate Study (E.g.. AGEC, AGED, etc.)

____

9. Primary Emphasis of Graduate Study:

____

10. Hours of Graduate Work Completed:

____ hours

11. Reason For Participating in In-service Education/Staff Development Opportunities (*Mark Only the most important response*)

1 ☐ Advanced Degree
2 ☐ Updating
3 ☐ Develop Area of New expertise
4 ☐ Professional Development.
5 ☐ Personal Development
6 ☐ Other (*Please Specify*)

_____

Part II. COURSES OR TOPICS

Instructions:

Please rank the COURSES/TOPICS under each sub area from the MOST important to the LEAST important with 1 as the most important , 2 as the next most important, etc. Also select the best deliver method and time of each courses\topics by using CODE numbers on PAGE 4. Remember to complete both "Best Delivery" Method and Time as well as ranking your priority. Each Sub-area should be ranked separately.

Your Priority	COURSES/TOPICS	Best Delivery	
		Method	Time
	Sub-area I: Computers		
	Internet use		
	Computer technology (hardware)		
	Use of computer programs (databases, spread sheets)		
	Internet news letters		
	Use of several computer programs in agriculture		
	Sub-area II: Horticulture		
	Commercial fruit & nut production		
	Floriculture		
	Water gardens		
	Commercial vegetable production		
	Landscape plant selection update		
	Trees and shrubs		
	General horticulture		
	Home gardening & lawn		
	Sub-area III: Human Environmental Science		
	Getting along with difficult people		
	Parenting skills		
	Stress management		
	Money management		
	Physical fitness wellness (exercise and health)		
	Food Nutrition		
	Family living		
	Parenting with risk parents or first time parents		
	Home base business (overview)		
	Food preservation		
	Housing (Interior & surfaces)		
	Sewing		
	Sergers		

Your Priority	COURSES/TOPICS	Best Delivery	
		Method	Time
	Extension teaching methods		
	Telecommunications		
	Curriculum development		
	Sub-area V: Production Agriculture		
	Beef forages		
	Fertilizer & herbicides		
	Beef production		
	Weeds & brush control		
	Financial records		
	Beef nutrition		
	Production agriculture		
	Farm management		
	Plant problem diagnosis methods (Plant pathology)		
	Marketing products & commodity markets		
	Alternative Agriculture Enterprises		
	Insect disease resistance and control		
	Wheat, Milo production		
	Tillage and moisture conservation		
	Livestock judging		
	IPM updates		
	Dairy nutrition, total mix rations		
	Grain grading		
	Ostrich production		
	Sub-area VI: Program Administration		
	Motivation		
	Balancing multiple assignments		
	Time management		
	Employee benefits update		
	Marketing 4-H programs, recruitment and maintaining		
	Management skills		
	Counseling skills and techniques		
	Supervisors skills & techniques		
	Program evaluation		
	Financial Planning for retirement		
	Human resource management skills		
	Resource development		
	Delegation		
	Supervision & management of para-professionals		
	Key people in county offices to be trained		

Your Priority	COURSES/TOPICS	Best Delivery Method	Best Delivery Time
	Sub-area VII: Program Development		
	Creative marketing for Extension programs		
	Grant opportunities outside Extension (grant writing)		
	Management of new and old programs in changing times		
	Networking outside Extension		
	County government		
	Marketing Extension programs to an urban audience		
	Sub-area IIX: Rural Development		
	Rural real estate issues(Water, fire protection)		
	Improve leisure for rural counties		
	Sub-area IX: Youth Development		
	4-H programs (leadership, citizenship, empowerment, on-trac)		
	Fun educational programs and ideas for 9-15 yr. olds		
	Recruiting and working with volunteers (v. development)		
	Volunteers accountability and liability Extension programs		
	Youth issues		
	Building self-steem		
	How to present school enrichment		
	Youth at risk topics (ages 1-5 yr.)		
	Sub-area X: Other		
	More masters courses in other areas than Ag-Ed		
	Wildlife management		

Code	Best Delivery Method
1	Annual conference
2	Field Trips
3	Hands on
4	In District
5	Independent study
6	Off campus (Individual Counties)
7	OK City
8	On Campus Courses
9	On Campus Workshop/Seminars
10	One Net\Compressed video
11	Orientation
12	Short Presentations
13	Slides
14	Video Tapes

Code	Best Delivery Time
1	April (Planting Season)
2	Compressed Semester Schedule
3	Day time during The week
4	Evenings
5	Fall Session
6	In-services
7	January, February & December
8	October (harvest)
9	Summer Session
10	Time to Work it in
11	Weekends
12	Winter Inter-Session

Part III. MOST APPROPRIATE TIME FOR IN-SERVICE EDUCATION/STAFF DEVELOPMENT

Instructions:

Please RANK the following delivery methods from the MOST to the LEAST acceptable, with 1 being the MOST acceptable, 2 as the next most acceptable, etc.,

RANK	Course Delivery Time
_____	Day time during the week
_____	**In-services**
_____	January, February & December
_____	**Time to Work it in**
_____	Winter inter-session
_____	**Summer session**
_____	Compressed semester schedule
_____	**Fall session**
_____	April (Planting season)
_____	**October (Harvest)**
_____	Evenings
_____	**Weekends**

Part IV. POTENTIAL DELIVERY METHOD(S)

Instructions:

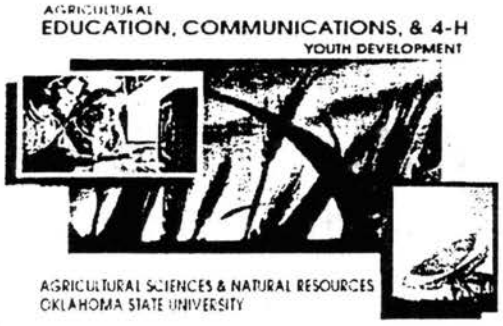
Please RANK the following course delivery method from the MOST to the LEAST appropriate, with 1 being the MOST appropriate, 2 as the next most appropriate, etc.,

RANK	Course Delivery Method
_____	In District
_____	**Hands on**
_____	Off campus in individual counties
_____	**Videotape**
_____	Field trips
_____	**Short presentations**
_____	One-Net\Compressed video
_____	**On Campus Workshop/seminars**
_____	Annual Conference
_____	**Oklahoma City**
_____	Independent study
_____	**Slides**
_____	On campus courses
_____	**Orientation**

Deadline
Monday, September 30

Return to:

Mario P. Villaquiran
Graduate Assistant
Department of Agricultural Education,
Communication and 4-H Youth Development
448 AG Hall
Oklahoma State University
Stillwater, OK 74078-6031



APPENDIX D

INSTITUTIONAL REVIEW BOARD APPROVAL

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 02-08-96 **IRB#:** AG-96-016

Proposal Title: IN SERVICE EDUCATION NEEDS OF COOPERATIVE EXTENSION FIELD STAFF IN OKLAHOMA

Principal Investigator(s): James D. White, Mario Villaquirán P.

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature: 
Chair of Institutional Review Board

Date: February 9, 1996

2

VITA

Mario Villaquiran P

Candidate for the Degree of

Doctor in Philosophy

Thesis: AN ASSESSMENT OF IN SERVICE TRAINING NEEDS OF COOPERATIVE EXTENSION FIELD STAFF IN OKLAHOMA

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Cali, Colombia, on August 20, 1958, the son of Humberto and Emilia Villaquiran. Married to Heloisa Carneiro and have two daughters, Emily and Carolina.

Education: Graduated from Universidad Nacional de Colombia in 1984. Received Master degree from Universidad Nacioanal, 1985, Master degree, Oklahoma State University, 1990, Masters degree, Oklahoma State University, 1992. Completed the requirements for Doctor of Philosophy degree at Oklahoma State University in May, 1997.

Professional Experience: Researcher in the International Center for Tropical Agriculture; Research Assistant, Oklahoma State University, Teaching Assistant, Oklahoma State University

Professional Organization: American Society of Animal Science, Colombian Society of Veterinary Medicine, American Society of Agriculture Economics, American Society of Range Management