FACTORs RELATED TO TEACHING STYLE PREFERENCE
OF OHIO COOPERATIVE EXTENSION FACULTY AND
PROGRAM STAFF

Dissertation

Presented in Partial Fulfillment of the Requirements for the
Degree Doctor of Philosophy in the Graduate School of
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By

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* * * * *

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CHAPTER I

INTRODUCTION

Background and Setting

The development of the American state and land-grant universities represented a revolution in educational philosophy - a philosophy that boldly asserted that education should be available to all people. In 1862, the visionary legislation of Justin Morrill to provide land grants for the endowment, support and maintenance of colleges of agriculture was signed into law. The passage of this act was the formation of what can be described as an essential partnership - a federal-state government collaboration that is dedicated to providing exceptional educational opportunity for all Americans. (Clodius, 1987).

From their very beginning, the land grant institutions had a common purpose - to extend to the nation’s working people - a practical and useful education based on scientific knowledge. In the words of Justin Morrill, "the fundamental ideal was to offer an opportunity in every state for a liberal and larger education to larger numbers, not merely to those destined to sedentary professions, but to those much needing higher instruction for the world's business, for the industrial pursuits and professions of life" (Rhodes, 1987, p.2).

The concept of the land grant university was sound, but acceptance and results were slow. Not only were the number of qualified faculty members and sufficient
textbooks limited, but students chose not to or did not meet the entrance requirements to attend the people's universities or experiment stations. Farm schools, institutes, experiment stations and demonstrations were all part of the effort to reach the agricultural community, but it wasn't until the development of the Cooperative Extension Service through the 1914 Smith-Lever Act that the land grant universities were able to focus on a coordinated nationwide "outreach" program. In the more than 75 years since the Smith-Lever act was passed, numerous amendments have been made, but it's basic intent of providing practical and useful information in the subjects of agriculture and home economics has remained the same. Simply stated, the establishment of the act was to, "aid in diffusing among the people of the United States useful and practical information on subjects relating to agriculture and home economics, and to encourage application of the same" (Prawl, Medlin, and Gross, 1984, p. 24).

It is often said that education is the foundation upon which all change in fundamental and progressive sense is based. As an educational unit of the United States Department of Agriculture, the Cooperative Extension Service was established with the purpose of offering informal education to the people of rural America. Changes in the mid 1950's occurred in Extension education programs when constituents in towns and urban areas requested assistance and services that until that time had been available primarily to rural audiences. In addition, the passage of the Civil Rights Act of 1964 mandated that all Extension programs be open to all citizens regardless of race, color, national origin, sex or handicap. Today, the Cooperative Extension Service is one of the world's largest adult education organizations. Through it's structure and organization, it provides a system for lifelong learning (Prawl, Medlin, and Gross, 1984, p. 226).
Statement of the Problem

From its very beginning, the Cooperative Extension Service philosophy has been one of advocating positive, lifelong, individual and behavioral change. J. Neil Raudabaugh, of the Extension Service, USDA made the following statement about the philosophy of Cooperative Extension Education:

"The philosophy of the Cooperative Extension Service assumed from the beginning that people must be reached where they are - that is, at their present background of education and level of interest and understanding. It also assumed that the aims and objectives are not to be fixed and unchangeable. They must be modified on the basis of individual and social needs. "It is the function of the Extension Service to teach people to determine their own needs and the solutions of their own problems; to help them to acquire knowledge and to inspire them to action." The basic philosophy of extension education is to teach people "how" to think, not "what" to think.

Another basic principle is that the extension worker teaches people to help themselves, not do things for people. The worker can best serve the people by helping them to recognize their own potentialities in learning, to desire, to grow, to reach out in order to improve their present status. The extension worker who accomplishes this for his people teaches "people" not "subject matter."

The success of the extension worker depends on his sympathy and understanding of people and problems of rural and urban life. It also depends upon his knowledge of how to apply the principles of extension education and psychology to the situations in which he works. His success also depends upon sound technical training and a broad background of education and experience...." (Prawl, Medlin, and Gross, 1984, p. 31).

Cooperative Extension Service workers are educators of adults. They instruct adult audiences through formal group instruction as well as small group and one on one consultation. Practical research relevant to the needs and concerns of the constituents is conducted and published. The Cooperative Extension Service is in the forefront of lifelong learning and behavioral change for the adult learner.

"Adult learning is a major, continuing mode of adult behavior permeating the major categories of human experiences and the major sectors of society. It takes place in a "natural setting." Adult education refers to organized and sequential learning experiences designed to meet the needs of adults. It takes place in the context of "learning organizations." To be sure, all adult education then involves adult learning, but all adult learning is not adult education" (Delker, 1974, p. 24).
"Lifelong learning means self-directed growth. It means understanding yourself and the world. It means acquiring new skills and powers -- the only true wealth which you can never lose. It means investment in your self. Lifelong learning means the joy of discovering how something really works, the delight of becoming aware of one new beauty in the world, the fun of creating something, alone or with other people" (Gross, 1977, p. 16).

In 1989, Van Tilburg and Smith postulated that by combining these definitions of adult education and lifelong learning that the goal of the Cooperative Extension Service as one of the world's largest adult education organizations could be to:

"Promote a major, continuing mode of adult behavior aimed at self-directed growth using organized and sequential learning experiences designed to meet the needs of adults. Incorporated into these experiences is the opportunity for adults to understand themselves in relationships to their immediate world as well as to the extended, acquiring new skills and powers to not only function but flourish. The Extension method of adult education recognizes the difference between adult learning and adult education and provides the vehicles with which to link one with the other" (Van Tilburg and Smith, 1989).

Van Tilburg and Smith believed that inherent in this newly created goal of the Extension mission is the assumption that Extension educators know and understand how to accomplish this goal, that they possess the knowledge and skills needed to anticipate and recognize adult needs and direct learning activities to adequately address those needs. Based on this assumption, the principles of adult education as the foundation for learning should be evident in the teaching styles of Cooperative Extension faculty and program staff.

A historical review of the hiring practices, pre-professional training requirements and the nature of OCES in-service offerings presented during the past five years indicate that this assumption may not be true. A look at preprofessional educational requirements
as well as on the job staff development opportunities indicate that most Extension professionals are not trained to assume the role of an educator of adults. Nationally the hiring practices of Cooperative Extension Service in the United States including Ohio have been to hire individuals who have expertise in a technical subject matter rather than education. (Prawl, Medlin & Gross, 1984; Stitzlein, 1990,) as reported by Van Tilburg, Smith, 1990). This is substantiated by 1989 OCES employment figures which show that of the 400 county, district, and state faculty who were employed as of April 1, 1989, the ratio of those with technical degrees to educational degree was almost three to one. (OCES Detailed Employee Record, 3/29/89). A review of in-service opportunities available to OCES faculty during the past five years indicate that some in-services have included effective teaching techniques and adult learning activities. However it should be noted that in Ohio, in-service opportunities are optional in nature. Records also indicate that no in-service training has been offered specifically aimed at understanding and teaching the adult learner (Van Tilburg and Smith, 1989 p. 2).

A study conducted by Norland, Seevers, and Smith, in 1990 sought to describe the knowledge, attitudes and behaviors related to principles of adult learning in teaching adults. Results of that study were used as a needs assessment to design in-service training for Ohio Cooperative Extension faculty and program staff. Data gathered from that study were used to describe level of knowledge related to principles of adult learning, describe attitude to perceptions of being an adult learner, describe the extent to which behaviors associated with teaching adults are teacher-centered versus learner centered and to determine if differences existed among faculty and program staff on selected demographics.
Purpose of the Study

The primary focus of this study was to describe the factors related to the teaching style preference of the Ohio Cooperative Extension faculty and program staff as measured by scores on the Principles of Adult Learning Scale. Additionally, this study sought to look at two additional measurements predictive of teaching behavior: sensitivity and inclusion. Sensitivity and inclusion are measured by the Van Tilburg/Heimlich measure. Also examined was the respondents’ attitudes toward their roles as adult educators and their knowledge regarding basic adult education principles and practices.

Variables and Objectives of the Study

The following dependent variable and antecedent characteristics were used in the study:

I. Dependent Variable:

A. Scores on the Principles of Adult Learning Scale (PALS) as indicated by:

- Total or summated score
- scores on each of the 7 factors or elements that comprise the total score

II. Antecedent Characteristics:

A. Attitude toward perceived role as an adult educator

B. Knowledge of basic adult education principles and practices

C. Sensitivity of the instructor to the needs/concerns of clientele/students

D. Inclusion by the instructor of clientele/students in the design of their own learning experiences

E. Demographic Variables:

1. Major Program Area of Responsibility
2. Current Professional Position Within OCES
3. Number of Years Employed by Cooperative Extension Service
4. Highest Educational Degree Achieved  
5. Academic Major in Highest Degree Area  
6. Total Number of Formal Adult Education Classes Taken  
7. Professional Teaching Experience Outside of Cooperative Extension  
8. Gender  
9. Age

III. Objectives of the Study

The following research objectives were established as a guide for the study.

1. To Describe the faculty and program staff of the Ohio Cooperative Extension Service on the following selected characteristics:

   A. Attitude toward perceived role as an adult educator  
   B. Knowledge of basic adult education principles and concepts possessed  
   C. The extent to which behaviors associated with teaching adults exhibit sensitivity as measured by the Van Tilburg/Heimlich Sensitivity/Inclusion Scale  
   D. The extent to which behaviors associated with teaching adults exhibit inclusion as measured by the Van Tilburg/Heimlich Sensitivity/Inclusion Scale  
   E. The extent to which behaviors associated with teaching adults are teacher-centered or learner-centered as measured by mean scores on the Principles of Adult Learners Scale  
   F. The extent to which the specific elements that determine perceived teaching style contribute as measured by mean scores on each of the seven factors that comprise the Principles of Adult Learning Scale, (PALS):

       - Learner Centered Activities  
       - Personalizing Instruction  
       - Relating to Experience  
       - Assessing Student Needs  
       - Climate Building  
       - Participation in the Learning Process  
       - Flexibility for Personal Development

   G. Major Program Area of Responsibility  
   H. Current Program Position Within OCES  
   I. Length of Service with Extension  
   J. Highest Education Degree Achieved  
   K. Academic Major in Highest Degree  
   L. Total Number of Formal Adult Education Classes Taken  
   M. Professional Teaching Experience Outside of Extension  
   N. Gender  
   O. Age
2. To describe the relationship between antecedent characteristics, specifically:

A. Perceived degree of Sensitivity, Inclusion, Knowledge, and Attitude and the characteristics of:
   1. Major Program Area of Responsibility
   2. Current Program Position Within OCES
   3. Length of Service with Extension
   4. Highest Educational Degree Achieved
   5. Academic Major in Highest Degree
   6. Total Number of Formal Adult Education Classes Taken
   7. Professional Teaching Experience Outside of Extension
   8. Gender
   9. Age

B. Perceived degree of Sensitivity and Inclusion and Attitude

C. Perceived degree of Sensitivity and Inclusion and Knowledge

3. To describe the relationship between all antecedent characteristics and the dependent variable.

4. To determine the best predictor(s) of the dependent variable, "teaching style preference, as measured by PALS."

**Definition of Terms**

The following terms used in this study were operationally defined as follows:

*Academic Major (Major Area of Study)* - The field of study in the highest academic degree achieved by the respondent.

*Cooperative Extension Faculty* - Ohio Cooperative Extension employees at the state, district, and county levels holding Ohio State University faculty status.
Cooperative Extension Program Staff - Ohio Cooperative Extension employees at the state, district, and county levels, who do not hold faculty status, but are responsible for planning, conducting, and evaluating educational programs.

Current Position - The self-reported position which respondents hold within the Ohio Cooperative Extension Service.

Highest Academic Degree - The highest educational degree received by the respondents, including: 1. High School/GED, 2. Bachelor's Degree, 3. Master's Degree, 4. Doctoral Degree or Ph.D.

Inclusion - Inclusion is defined as the "act of including or the state of being included." include is defined as a transitive verb meaning "to have or take in as a part or member, to put into a group, class, or total" (American Heritage, 1985, p. 651). The operational definition of inclusion in this study is: the measure to what extent the instructor involved his/her students in planning and designing their own learning experiences. The Van Tilburg/Heimlich (1989) matrix was used.

Learner-Centered - A measure of teaching style which supports the collaborative teaching-learning mode in which authority for curriculum formation is shared by the learner and practitioner/instructor. High scores on PALS have been designated to reflect a learner-centered approach to the teaching-learning transaction.
Length of Service - The self-reported number of years respondents have been employed by the Ohio Cooperative Extension Service as of January 1, 1990.

Major Program Area of Responsibility - The Extension Program Area reported by respondents as the area to which they devote the greatest portion of their time. In this study, respondents could choose: 1. Agriculture, 2. Home Economics, 3. 4-H, 4. Community/Natural Resource Development, or 5. Other. The category "other" was included in this study because of personnel employed in administrative professional positions who still plan and conduct educational programs but are not linked to a specific program area of responsibility.

Principles of Adult Learning Scale - A 44 item summated Likert-type instrument developed and validated which measures a practitioners overall preference for teaching behavior in an adult education setting. The continuum describes the degree to which behaviors associated with teaching adults are teacher-centered or learner-centered.

Sensitivity - Sensitivity is defined as "the quality or condition of being sensitive," with the most appropriate definition of sensitive for this study being "susceptible to the attitudes, feelings, or circumstances of others" (American Heritage, 1985, p. 1117). For this study the definition of sensitivity is the degree of awareness of the educator is to the needs and concerns of his/her students. The Van Tilburg/Heimlich (1989) matrix was used.
**Teacher-Centered** - A measurement of teaching style in which the authority for curriculum formation resides with the instructor/practitioner. Low scores on the PALS have been designated to reflect a teacher-centered approach to the teaching-learning transaction.

**Van Tilburg/Heimlich Measure** - A Thurstone equal-appearing interval scale that measures the constructs of sensitivity and inclusion. Van Tilburg and Heimlich suggest that these dimensions in isolation can simply and accurately describe an individual's preferred teaching style.

**Limitations of the Study**

Methods of collecting information regarding observable behaviors of teaching adults by Cooperative Extension faculty and program staff can be costly and time consuming. For this study, a mail questionnaire was used to obtain data regarding teaching behavior of respondents. A key limitation to this approach is that data obtained consist only of perceptions of the respondents to their teaching style and not measurable behaviors, therefore, it is possible that sources of variability inherent in self-reports may reduce the validity of the scores. Edwards' (1957) "social desirability" factor might be expected to influence those items which to a respondent appear to have a "socially desirable" response. Additionally Nunally, (1967, p. 479) indicates that there are individual differences in the tendency of subjects to respond in socially desirable ways:
"The above evidence [referring to Edwards] regarding social desirability, however said nothing directly about individual differences in the tendency to say good things about one's self; rather, it pointed to a bias in that regard for the average person. More recent evidence has made it clear that individual differences in that tendency do explain much of the variance on self-inventories."

Another limitation to this study is that only Ohio Cooperative Extension Service personnel were used, therefore, results can only apply to Ohio personnel and not be generalized to all Cooperative Extension Service faculty and program staff.
Chapter II

REVIEW OF LITERATURE

As compared to its counterpart of studies regarding children and adolescents, the study of adult learners and the factors that influence them is still significantly recent. The concept of teaching style has merited a growing interest among educators and researchers in the field of adult education. However, in addition to looking at the specific characteristics of the adult education teacher, the current focus is on the actual behavior that the teacher exhibits in the classroom (Conti, 1984, p. 1).

This review of literature relates to the understanding of the Cooperative Extension Service as an adult education organization, the role of the Extension worker as a teacher of adults, specific characteristics of adult learners, teaching style (including variables that influence teaching style), and measuring teaching style. The information included in this chapter is presented under the following major headings: Literature related to Cooperative Extension as an Adult education program, Literature related to adult learners, Literature related to teaching style, and Literature related to measurement of teaching style.
According to Boone, (1985, p. 265), "the Cooperative Extension Service... is the world's largest publicly supported informal adult education and development organization... with over half a century of recognized achievement, it is America's first (and only) national system in adult education." The Cooperative Extension Service's unique network provides professional educators/staff in almost every U.S. County in all states to provide linkage for the dissemination of research-based knowledge to clientele. Created as a result of the Smith Lever Act in 1914, the Cooperative Extension Service became the third arm of the land-grant system in order to transmit information from college and the Department of Agriculture to local people (Warner and Christenson, 1984 p. 6). The Extension Service was created to disseminate and encourage the application of useful and practical knowledge about agriculture, home economics, and related subjects among the people of the United States not enrolled in land-grant colleges. In the early years of the Extension Service, it was the primary agricultural education organization in the local communities. The involvement of young people in what is now called the 4-H program began in 1902 with the establishment of corn clubs. It was hoped that through the formation of such clubs for young people that adoption of desirable agricultural practices would be made by their parents. Today, that effort has expanded into the world's largest informal youth development program. A program targeted for youth ages 8-19, yet managed by millions of trained parents and other adult volunteers and paid staff.

Throughout the years, many new programs have been added and new clientele reached. The Extension Service, through new programs, not only broadened its role with existing clientele, but at the same time acquired new audiences. Millions of individuals
ranging in age from eight to ninety-eight participate in a variety of educational experiences organized around the program areas of agriculture, home economics, 4-H/youth development, and community resource development. In 1987, the Extension Committee on Organization and Policy (ECOP) recommended:

"The mission of the Cooperative Extension System should be restated, enunciating the system's role as a nationwide university-based educational resource dedicated to improving people's lives by addressing selected needs and issues with knowledge-based educational programs."

(Extension in Transition: Building the Gap Between Vision and Reality, 1987, p. 5)

"Extension programs are educational in nature and, therefore, are appropriately placed in an educational system (e.g., the land-grant colleges.) Unlike most other agencies, the CES does not have financial or regulatory powers in the implementation of specific programs, nor does it conduct formal classroom instruction. It provides informal, noncredit education for the purpose of assisting individuals in making their own decisions" (Warner and Christenson, 1984, p. 10). The Extension Service prides itself in its responsiveness to developing educational programs based on local needs and priorities.

The Extension Service is uniquely administered through a federal-state-local partnership. It is this unique administrative arrangement that has served to preserve the educational nature of the program and provided it with a legitimacy as well as has reduced the amount of political influence on the institution (Warner and Christenson, 1984, p. 11).
Facilitating the learning experience for adults, necessitates an understanding of adulthood in conjunction with the learning process. An adults' ability to acquire new information may have more to do with lifestyle, social roles and attitudes than an innate ability to learn (Darkenwald and Merriam, 1983, p. 76).

Current literature in adult education supports the idea that teaching adults is different than teaching children or adolescents. Malcolm Knowles (1980, 1984) is attributed with developing the most cogent model underlying the assumption that teaching adults should differ from teaching children and adolescents (Beder and Darkenwald, 1982). "By contrasting 'andragogical' or learner-centered methods with 'pedagogical' or teacher-centered methods, Knowles, argues that adults differ from preadults in a number of important ways that affect learning and consequently, how they approach learning" (Inel, 1989, p. 1). Knowles (1984) andragogical model is based on the following assumptions:

- Adults tend to be self-directing.
- Adults have a rich reservoir of experience that can serve as resource for learning.
- Since adult readiness to learn is frequently affected by their need to know or do something, they tend to have a life, task, or problem-centered orientation to learning as contrasted to a subject-matter orientation.
- Adults are generally motivated to learn due to internal or intrinsic factors as opposed to external or extrinsic forces.

Knowles andragogical model is further supported by data collected from different studies and summarized by K. Patricia Cross (Peterson and Associates, 1979) that resulted in the following conclusions about adult learning needs:
- Most adult learners choose education offerings where they can learn to do something which is of immediate, practical use to them. Traditional discipline-oriented subjects are likely to be popular only with degree-oriented learners.

- Rewards such as better jobs and more pay motivate adults whose basic economic and educational attainments are low. Rewards related to personal fulfillment motivate only those persons whose basic necessities have been met.

- Motivational factors may be more of a barrier to continued learning than surveys have revealed. Environmental factors such as cost may be reported more frequently because they are socially acceptable. Also, adults lack knowledge of actual barriers.

- Adults pay less attention to "convenient" locations and schedules than would be anticipated. They seem to respond more to their perceiving that the subject matter is credible and is appropriate to the location or schedule regardless of the convenience factor.

- Most adults respond more positively to interactive and active modes of learning than to passive modes such as listening or watching.

Although the assumptions underlying the andragogical model have to do with how adults learn, the model has clear implications for teaching adults. It stands to reason that if adult learning differs from child or adolescent learning, then it follows that adults should be taught differently (Beret and Darkenwald, 1982; Feuer and Geber, 1988).

The most recent findings indicate that Knowles has gradually modified his position regarding the difference between how children learn (pedagogy) and how adults learn (andragogy). Feuer and Geber (1988, p. 33) indicated that, "What he once envisioned as unique characteristics of adult learners, he now sees as innate tendencies of all human beings, tendencies that emerge as people mature." Despite this modification, the andragogical model has significantly impacted the field of adult education, with one result being the assumption that teaching adults should differ from teaching children and adolescents (Imel, 1989, p. 1).
Literature Related to Teaching Style

Literature related to the adult learner has sought to explain the behaviors of both the learner and teacher in terms of style. Style refers to a person's pervasive qualities that persist even though situational conditions may change. (Conti, Weilborn, 1984, p. 1) It is their belief that most traits associated with style are not congenital; but rather that they develop over time, can change slowly, and reflect other characteristics of the person. According to Fisher and Fisher (1979, p. 251), "the idea of teaching style is quite different from the method of instruction used by a teacher. It refers to a classroom mode, a pervasive way of approaching learners that might be consistent with several methods of teaching."

Numerous studies have been conducted which explore learning styles and appropriate methods for the many different learning styles, with the purpose being to establish a linkage between individual learning preference and teaching methods. Cross (1976) refers to learning style as, "the characteristic ways each individual collects, organizes, and transforms information into useful knowledge."

The role or behaviors of the teacher/practitioner has more recently become a focus in adult education. Yet, unlike learning styles, the research identifying teaching styles is limited. Heimlich (1990, p. 25)) suggests one explanation for the lack of available research on this topic is the narrow view of teaching held in this society. Heimlich quotes Bidwell's views (1973) that our society views teaching as an occupations technique or work processes as opposed to viewing teachers as individuals. According to Fisher and Fisher (1979, p.254) the teaching style label is a hypothetical construct which is associated with various identifiable sets of teacher behavior and which is a useful tool "to understand
and perhaps explain important aspects of the teaching-learning process." A review of research and literature available derives many definitions of teaching style.

Definitions

Fisher and Fisher (1979, p. 245) refer to style as a person's pervasive qualities that persist even though situational conditions may change. This is identifiable by various sets of classroom behaviors by the teacher which are consistent even though the content that is being presented may change. This idea was supported by Gauld (1982, p. 13) who defined teaching style as "the consistent way a teacher organized and delivers a body of knowledge." Consistent with that approach is Solomon and Miller's (1961, p. 12) description that style is "a pattern composed of classroom behaviors of a teacher which are consistent over time and which distinguish him from other teachers." Dunn and Dunn (1979, p. 241) describe teaching styles as "the attitudes teachers hold toward various instructional programs, methods, and resources as well as kind of youngsters they prefer working with." Along those same lines, Huelisman (1983, p. 15) defines teaching style as consisting "of a complex of personal attitudes, traits, and behaviors, and the media used to transmit to or receive data from the learners."

Specific Dimensions of Teaching Style

Many approaches have been used by researchers and theorists to describe and classify teaching style. Two primary approaches have seemingly emerged: those who have developed classification systems, or taxonomies relating to categorical structures and those who classify by examining the characteristics or traits of the educator that define his/her unique qualities as an individual. Despite the approach utilized, some common threads can be found throughout.
Taxonomies and Categorical Structures of Teaching Style

A variety of classification systems have been developed to assist in the description of teaching style. Descriptions in each of the classifications vary but commonalities exist and tend to centralize around the themes of teacher-centered, learner centered, or content focused. As part of a study at the Center for Research and Development in Higher Education, Joseph Axelrod (1970) identified a typology of five teaching styles. These styles consist of: 1) The Drillmaster (or Recitation Class Teacher); 2) The Content-Centered Faculty Member; 3) The Instructor-Centered Faculty Member; 4) The Intellect-Centered Faculty Member; and 5) The Person-Centered Faculty Member. Each of these five types are based on whether the instructor in student-centered, subject-matter centered, or a combination of the two. Axelrod classifies categories one and two as subject-matter-centered, and categories four and five as student-centered. Category three is a combination of the two approaches and employs a faculty member who is highly interested in the teaching process, effectively utilizing subject matter while actively engaging the student in the teaching-learning process.

The teacher-centered versus learner-centered theme is a common one in discussions related to teaching style. Knowles (1980) theory of andragogy versus pedagogy focuses on the assumption of teacher directed learning (pedagogy) versus self-directed learning (andragogy). According to Lenz (1982, p. 40), "we can identify two broad styles of instruction - proactive and reactive - that stem from two very different psychological bases." From this perspective, "the proactive style is learner-centered and views learning as an individualized process of discovery and growth. Reactive instruction places the learner in the position of the responder." In this mode the learner is expected to react to the teachers plans, and decisions and depends upon the feedback from the teacher rather
than conducting any self-assessment. Lenz (1982) believes that the connection between the teacher and learner is crucial. Because of the impact of this connection at every stage of the learning process, the traditional model which sets up the teacher as an authority figure is not appropriate. Lenz's Relationship model is driven by outcomes. In the relationship of host-guest, every effort is made to create an environment that is relaxing and comfortable. When this occurs a good host can expect that guests will return in the future. In the client-consultant relationship the consultant's role is that of advisor, leaving responsibility for taking the advice offered to the client. In this relationship when expectations are met, clients are satisfied with the services provided. The third relationship described is that of a partnership in which both parties make an investment and both expect a return. The partnership is considered successful when both parties live up to their responsibilities.

Fisher and Fisher (1979) describe six teaching styles related to the teacher-student interaction. They include:

1. Task-Oriented: materials to be learned are prescribed, specific performance demands
2. Cooperative Planner: instruction and outcomes planned with student cooperation
3. Child-Centered: student pursues whatever interests them - focus on child's curiosity
4. Subject-Centered: focus on organized content to near exclusion of learner
5. Learning-Centered: teachers have equal concern for students and curriculum
6. Emotionally Exciting: teachers show own intensive emotional involvement in teaching, establish an atmosphere of excitement and emotion

In an approach that explores another type of relationship, Robinson (1979) defines teaching style as placement within one of five categories. These categories are on a continuum ranging from highly content-centered to highly people-centered.

Solomon and Miller (1961), studied shared aspects of teaching behavior, investigating: 1) which elements of the learning situation the teacher thinks is most
important - the student, the subject matter, or the world of the student; 2) that pattern of interaction the teacher tends to encourage most - student-student, teacher-student, or teacher-subject matter; and 3) whether the teacher receives "gratification" in the subject or the act of teaching. Solomon and Miller used a theatrical analogy to categorize roles of teachers - some are directors, standing at the sidelines but very much in control, others are star actors - receiving all of the attention, and others are the stage managers - ensuring that everyone is comfortable and worrying about all of the details. Based on these elements, seven broad clusters of educators were identified:

Cluster 1: Businesslike, objective, impersonal
Cluster 2: Emphasis on communication
Cluster 3: Personal Approach
Cluster 4: Self-improvement
Cluster 5: Sensitivity toward students, interest in students
Cluster 6: Proactive Behavior
Cluster 7: Stimulating the student

Characteristics or Traits

A review of specific characteristics or traits that describe those unique characteristics of the teacher/educator is another approach to examining teaching style. Heimlich (1990, p. 28) explains this concept as being similar to recognizing "that the environment in which the educator matured will define their predilection for behaviors." Supporting this posture is a commonly held belief that, "teachers teach the way they were taught." Studies conducted by Fisher and Fisher (1979) however, found instructors believe that the way that they learn is the "best" or "right" way and tend to use the same approach, thus postulating that "teachers teach the way they learned." Cornett (1983, p. 14) suggests that "whatever the teachers' learning style, it will have an effect on his or her teaching style." This is congruent with Conti and Welburn's (1986) suggestion that the
educator creates a learning environment that fits the style of the educator and that when this teaching style is purposefully used, it does make a difference in student achievement.

Other research supports the view that teaching styles may be related to the environment from which the educator came. A study by Ryans (1970) showed that an educator raised in a home situation that was both financially and intellectually/culturally above average tended to score higher on scales measuring originality and imagination, verbal/semantic faculty and judgement than those from different backgrounds.

Personal factors related to background and environment that affect the role of behavior of adult educators were defined by Robinson (1979). Four factors found to influence behavior were: 1) education, previous experience, professional identification; 2) needs for dominance, acceptance and achievement; 3) other social roles of the educator such as family roles and group memberships; and 4) personal goals. Demming (1986) found that significant relationships existed between the teaching-learning and the educational-professional background and the gender of the teacher. Douglass (1982) and Pearsson (1980) also found that a significant relationship existed between an educators professional training in adult education and teaching behavior. An additional study by Franklin (1989), supports findings that philosophical orientation, previous experience and level of education influences an educators behavior.

According to Fisher and Fisher (1979), "the attitudes teachers hold toward various instructional programs, those and resources as well as the kinds of youngsters they prefer working with constitute part of their teaching style." It is these beliefs and attitudes that comprise an individuals educational philosophy. It is Boone's belief (1985) that an educators' personal values, goals and mastery of certain concepts combined with the individual's professional values and goals reflect that persons' personal philosophy of
adult education and it is that personal philosophy which serves as the framework that
guides and defines an individual's personal style. Conti (1985, p.11) believes that a
"synergistic whole which is referred to as philosophy" guides the behaviors of a teacher.
The philosophy formed from the collective traits possessed by the educator. As well,
Conti and Welborn (1986) suggest that the specific teaching style exhibited by an
individual is the operational behavior of the teacher's educational philosophy.

Summary

The definitions of teaching style found in the literature are many and varied, and
while there are common threads that can be detected, no one consistent definition
emerged. According to Heimlich (1990), there is a shared concept that is clear. That
concept states that (p. 30) "educators will, for whatever reasons, tend to perform over time
to their strengths, and that if left to their own devices, an educators' performance activities
will tend to utilize their strengths." Conti (1989) concludes that one's teaching style is
consistent, over all traits and qualities. The classifications, taxonomies, categories, and
traits discussed are a means of labeling and identifying those strengths and characteristics.
It is important to note that judgments regarding the "goodness" of one's style should be
avoided. Axelrod (1970) indicates that within every style there is likely to be both good
and poor educators. Identifying one's style is a recognition of what is - the strengths and
tendencies. An educator's style is a composite of who they are, their personality,
experiences, education, culture and environment, which in total determine your overall life
philosophy (Conti, 1990). One of the greatest influences on the learner is the teacher
(Knowles, 1970). Understanding one's style is useful to the educator not only in
understanding their own limitations and strengths, but also in defining what, if any
inconsistencies exist between their style and philosophy, and what changes or adaptations in method and/or philosophy should be strived for. Rather than picking a style from the literature and seeking to emulate it, the educator should strive for consistency within his/her natural style which stems from their life philosophy (Conti, 1990). If teachers are to know if style really makes a difference in student learning, then they must first identify that style and then critically reflect on their own behaviors in the learning environment related to that style.

Literature Related to Measurement of Teaching Style

Many studies dealing with the actual observation and measurement of teacher behavior in elementary and secondary education can be found in the literature, however, assessment of teaching style in relation to adult education is a relatively new phenomenon. The instruments that have been developed have commonly sought to assess to what degree an educator’s behavior is consistent with the principles and practices identified as good andragogical practice.

In 1975, Hadley developed the "Educational Orientation Questionnaire," and the "Educational Orientation Scales." The purpose of the questionnaire was to determine the pedagogical and andragogical orientations of adult educators based on six dimensions. The orientation scales were observer rating scales completed by three observers on each respondent. The questionnaire, scales, and a separate data sheet were completed by 409 adult educators from business and industry, religious institutions, government agencies and schools. On the basis of Mezirow's (1981) interpretation of andragogy, Suanmali (1981)
developed the "Andragogy in Practice Inventory." The inventory consists of a ten-item list of desired educator practices. The instrument, reviewed by member of the American Commission of Professors of Adult Education, deemed the inventory valid and that the items identified were good indicators of andragogical practice. Conti's (1979) dissertation resulted in a valid and reliable instrument based on adult education principles which are founded in the established literature. The forty-four item instrument measures the frequency an educator practices teaching/learning principles that are described in the literature. Conti's, Principles of Adult Learning Scale (PALS) used in this study is described in more detail later on in this chapter. James (1983) used a similar approach to Conti. After an extensive search of the literature on adult learning, a set of nine basic principles of adult learning was devised. After the principles were validated by a team of national adult education leaders, a forty-five item questionnaire comprising four to six statements about each of the nine principles, was constructed. The questionnaire was used with adult educators from a variety of educational institutions, including business and industry, colleges and universities and hospital patient education.

The instruments described have sought to measure teaching style by gauging specific attitudes and behaviors. An alternative approach, is to consider style "as a psychological or inherent function" (Heimlich, 1990, p. 44). Although attitude measures and some behavioral scales attempt to measure the internally focused aspects of the educator, most measurements of style, assess those characteristics that can be easily quantified. According to Heimlich (1990, p. 44), "these measures of style measure external elements of the educator without discussing the inherent preference of the educator." The "Van Tilburg/Heimlich Measure" (1990), using two Thurstone equal appearing interval scales, attempts to examine an educator's internal focus by looking specifically at the
characteristics of sensitivity and inclusion. The Van Tilburg/Heimlich instrument was used as a secondary measure in this study and will be explored in more detail later in this chapter.

The Principles of Adult Learning Scale (PALS)

Conti's Principles of Adult Learning Scale resulted from the perceived need that a valid and reliable instrument, based on adult education principles that are rooted in the literature and is capable of measuring the frequency with which an educator practices those teaching/learning principles did not exist. Since a large portion of the literature in adult education supports the collaborative teaching-learning mode as an effective approach to teach adults, Conti's PALS was designed to measure specifically the degree to which educators practice and support those principles. Commonalities can be found in the literature of some of the major contributors in the field of adult education. According to Conti (1983, p. 2), "the writings of Lindeman, Bergevin, Kidd, Houle, Knowles and Freire, collectively argue that the curriculum should be learner-centered, that learning episodes should capitalize on the learner's experience, that adults are self-directed, that the learner should participate in needs diagnosis, goals formation and outcomes evaluation, that adults are problem-centered and that the teacher should serve as a facilitator rather than a repository of facts.

To transform these general and theoretical principles into a usable instrument, they were reworded in behavior terms compatible with realistic experiences of practitioners. Thus, according to Conti (1979, p. 47) "the items in PALS consisted of precise and realistic possible adult classroom situations which were generated from the literature and which contained basic learning principles underlying the collaborative
teaching-learning mode."

The final instrument consists of a 44 item summated rating scale. Respondents indicate the frequency in which they practice the behavior on a six-point Likert-type scale ranging from Always to Never. It is believed that the scale is easy and simple to use since it can be self scored and be completed in 10-15 minutes. Scores on PALS may range from 0 - 220 with the average being 146 and the standard deviation, 20. Since PALS was first developed it has been used in a number of additional studies and training programs. The additional data collected allowed the author to conduct additional statistical analysis to verify the construct validity of PALS. The analysis of 778 cases drawn from a variety of institutional settings throughout the United States showed a strong enough similarity between the mean and standard deviation score for the total of all groups and the pilot group to support that 146 is an accurate mean and that the standard deviation should be 20 (Conti, 1983, p. 6). Furthermore Conti, postulates that this set of expanded data, lend additional support for the generalizability of PALS. Although PALS was originally designed for use in adult basic education settings, and is classroom oriented, the normative scores for PALS have remained consistent across various adult education groups (Conti, 1990, p. 83). Included in the list of other groups in which PALS has been successfully used is the Cooperative Extension Service. PALS was tested for construct, content, and criterion-related validity by juries and adult education practitioners from six different program areas. Reliability was confirmed using the test-retest method.

PALS has been used effectively with a variety of adult education institutions, including health practitioner, university and continuing education, literacy programs, business and industry, adult basic education, religious organizations and Cooperative Extension. Four specific studies have used PALS to explore the relationship of teaching
style to student achievement. Conti also believes, however, that PALS can be used to identify themes or topics around which in-service training activities can be designed for staff development. In considering PALS as a diagnostic tool, Conti quotes Grabowski (1976) as saying, "most teachers of adults have never received adequate, let alone, extensive, formal training" and that "improved training of adults is imperative in most areas of adult education." (Conti, 1979, p.129). This belief is consistent with the findings of the OCES Detailed Employee Record of 3/29/89 which showed that of the 400 county, district, and state faculty who where employed as of April 1, 1989, the ratio of those with technical degrees to educational degrees was almost three to one. At least four formal studies have been conducted utilizing PALS as an assessment for staff development and personal growth. Pearson (1980) used the instrument to investigate the relationship between managerial style and adoption of the collaborative teaching mode of 99 midwestern training directors. Dinges (1980) used the instrument as a staff development needs assessment tool to study 265 Illinois Adult Basic Education teachers, and Douglass administered the instrument to 204 health educators and Cooperative Extension faculty in Washington state to determine if there was a relationship between professional training of adults and support of the collaborative mode. In yet another study Conti (1983) collected scores from 153 Texas adult basic education practitioners. Based on deviations in scores a staff development plan was outlined for individuals desiring adapt their style.

Van Tilburg/Heimlich Measure

The Van Tilburg/Heimlich Measure was developed in 1989. The instruments' approach to measuring teaching style is from what is described as an internal focus on preferences, skills, and abilities. The authors identified two domains as containing an
internal focus for the educator: Sensitivity and Inclusion. Van Tilburg and Heimlich (1989) have explored the philosophical and theoretical basis for how an educator relates to a group. They suggest that there are two bi-polar dimensions at play: 1) sensitivity of the educator to the group, to individuals within the group and to self; and 2) inclusionary practices of the educator. Further they theorize that these dimensions of how an educator relates to a group are indicators of how an educator will prefer to perform over time with a group. Consistent with earlier definitions of teaching style - this then becomes a means of identifying an educator’s teaching style. The assumption was made that sensitivity and inclusion could be measured separately. Qualitative and quantitative process were incorporated in the development of a valid and reliable instrument that measures teaching

![Van Tilburg/Heimlich Matrix](#)
style as related to the dimensions of sensitivity and inclusion. Van Tilburg and Heimlich have proposed a two-by-two matrix to clarify the relationship of the low/high continuum that exists between the two dimensions (see Figure 1).

The labeling of the quadrants, identifies categories and classifications supporting those found in the literature and discussed under taxonomies and categorical structures. Dimensional categories, quadrant labels and their orientation are described in Table 1 (Heimlich, 1990, p. 11).

Table 1

Van Tilburg/Heimlich Categories and Relationships

<table>
<thead>
<tr>
<th>Sensitivity</th>
<th>Inclusion</th>
<th>Label</th>
<th>Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td>low</td>
<td>Expert</td>
<td>Subject-centered</td>
</tr>
<tr>
<td>low</td>
<td>high</td>
<td>Facilitator</td>
<td>teacher-centered</td>
</tr>
<tr>
<td>high</td>
<td>low</td>
<td>Provider</td>
<td>learner-centered</td>
</tr>
<tr>
<td>high</td>
<td>high</td>
<td>Enabler</td>
<td>learning-centered</td>
</tr>
</tbody>
</table>

Each style identified has merit, depending on the situation and circumstance, any of the styles so defined may be appropriate. Van Tilburg and Heimlich state that teaching style is a product of many things including personality, experience and education and that an individuals' beliefs about their own predilection toward sensitivity and inclusion can describe their preferred teaching style.

The recently developed Van Tilburg measure was presented in May at the 1990 Adult Education Research Conference. Currently, data available on its use and application is limited. For his doctoral dissertation, Heimlich (1990), sought to determine if
relationships existed between score on the Myers-Briggs Type Indicator and the Van Tilburg/Heimlich Sensitivity Measure. His hypotheses was that if a relationship was identified, it would suggest that there is a preference for teaching style based in part on personality preferences and relationships of the individual instructor to the class (p. 59). Findings from Heimlich's study indicate that while both instruments measure preferences; the Myers-Briggs Type Indicator measures preferences for process and the Van Tilburg/Heimlich measures preferences for operationalization of beliefs about andragogy, the Van Tilbrug/Heimlich Measure is not measuring the same personality measures as the Myers-Briggs Type Indicator. (p. 120.)

Summary

Discussions related to understanding and adapting teaching style are still relatively new in the literature in adult education. It has only been in the last ten years, that instrumentation, grounded in theory and the literature have been developed to assess an educator's preferred teaching style. For many of the newer instruments, limited data is available to assess it's extended use and application. Of the instruments that have been developed, most were designed for a targeted audience. Only the PALS instrument has been found to have been used previously with Cooperative Extension audiences.

Summary

Celebrating more than 75 years of recognized achievement, the Cooperative Extension Service is America's first and only national system in adult education. Utilizing a unique network system, the Cooperative Extension Service provides professional educators and staff in every county that daily provide millions of clients with information, research
and knowledge to address locally determined need and issues. In 1989, Ohio Cooperative Extension faculty and program staff alone reached over 12.9 million people (OCES Annual Report, 1989).

As the world's largest adult education organization, Cooperative Extension faculty and staff need to understand the characteristics and motivations of the adult learner. Current literature in adult education supports the assumption that teaching adults is different from teaching children or adolescents. Teachers of adults should recognize these differences and be prepared to design learning experiences that are consistent with the needs and expectations of the adult learner.

The role of the teacher/educator has more recently become a focus in adult education literature. While no one consistent definition of teaching style has emerged, it is commonly believed that an educator will over time perform to their strengths. Knowing ones' strengths and how to adapt them to maximize student learning should be a goal of every adult educator.

The measurement of an individual's preference toward teaching style can be measured using a variety of assessment tools. While a limited number of valid and reliable instruments are available, most, including the Principles of Adult Learning Scale, seek to link frequency of perceived behaviors to specific principles and assumptions rooted in adult education literature. Van Tilburg/Heimlich sought to explore teaching style from an internal perspective focusing on the dimensions of sensitivity and inclusion, relating sensitivity to the way an educator feels, and inclusion to how an educator puts these feelings into practice.

This section has sought to clarify the literature on teaching style as it relates to the teaching of adults and specifically to adult educators employed by the Cooperative
Extension Service. While the literature abounds on learning style, the phenomenon of teaching style and specifically the measurement of remains limited.
CHAPTER III

PROCEDURES

The following topics are discussed in this chapter: Research Design, Subject Selection, Instrumentation, Data Collection Procedures and Data Analysis.

Research Design

The study was descriptive-correlational in nature. It was designed to investigate factors related to perceived behaviors of teaching adults from the population of Ohio Cooperative Extension Service faculty and program staff that were employed as of January 1, 1990. The method of data collection used was a mail questionnaire.

Subject Selection

A census was utilized in gathering the information from the target population. A census was used to obtain the most accurate results possible. Permission was secured from Dr. Bobby D. Moser, Director of the Ohio Cooperative Extension Service to conduct a census. A listing of the names and addresses of faculty and staff was obtained from Dr. John Stitzlein, Leader, Personnel, of OCES. All State and District Administrators and Specialists, State Administrative Professionals, County Extension Agents, Extension Associates, Programs Assistants and Expanded Food and Nutrition Education Program (EFNEP) staff employed by OCES were surveyed. The total number of subjects utilized
in the study was 609. Table 2 summarizes the composition of the population by positions within the Ohio Cooperative Extension Service.

Table 2

<table>
<thead>
<tr>
<th>Position</th>
<th>Number</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Specialists/Administration/Administrative Professionals</td>
<td>175</td>
<td>28.7</td>
</tr>
<tr>
<td>District Specialists/Administrators</td>
<td>33</td>
<td>5.4</td>
</tr>
<tr>
<td>County Extension Agents</td>
<td>209</td>
<td>34.3</td>
</tr>
<tr>
<td>Extension Associates</td>
<td>41</td>
<td>6.7</td>
</tr>
<tr>
<td>Program Assistants</td>
<td>69</td>
<td>11.4</td>
</tr>
<tr>
<td>EFNEP nutrition educators</td>
<td>82</td>
<td>13.5</td>
</tr>
<tr>
<td>Grand Total</td>
<td>609</td>
<td>100.0</td>
</tr>
</tbody>
</table>

A major concern in the outcome measures of survey research is external validity. External validity refers to the degree to which the results of a study can be generalized beyond the sample. There are four major threats to external validity in survey research. They are frame error, sampling error, selection error and non-response error.
Frame error results when there is a discrepancy between the intended target population and the actual population from which the sample is drawn. In this study, frame error was controlled by using a complete and up-to-date listing of all OCES faculty and program staff.

Sampling error occurs when inappropriate sampling procedures are used and a nonprobabilistic sample is obtained. Sampling error as a threat to external validity was controlled by using a census. A census controls sampling error by ensuring that every subject in the target population is included in the sample.

Selection error occurs when some members of the population have a greater chance of being selected than others. The use of a census controls for selection error since all members of the population were selected for the sample. However, because the Ohio Cooperative Extension Service uses a multi-county staffing approach, the possibility existed for some agents who work in more than one county to receive more than one instrument. The list was carefully reviewed. Multiple listings of any names were removed so that an individuals’ name appeared on the list only once.

The final external validity threat in survey research is non-response error. Nonresponse error involves subjects in the sample who do not cooperate or who cannot be located. Non-respondents are a serious threat because they can vary significantly from respondents on the major variables that are being studied. Non-response was controlled by double dipping. After the deadline for the return of the questionnaire was past, a random sample was selected from the population of non-respondents. Ten percent of the non-respondents from each professional position category were randomly selected. These individuals were called on the telephone and asked to verbally respond to Section I - the first fifteen questions on the survey related to attitude. As a major characteristic in this
study, attitude was chosen as the characteristic on which to compare respondents to non-respondents. Differences between respondents and non-respondents on the variable of attitude were examined through the use of t-tests. The t-tests yielded no significant differences between the groups. Miller and Smith (1983) suggest that since the data were similar, they can be pooled and generalized to the population.

Instrumentation

A mail questionnaire (Appendix A) developed was used to collect data on the following:

1. The attitude of faculty and program staff related to their perceptions of being an adult educator;

2. The level of knowledge of faculty and program staff related to principles of adult learning;

3. Perceptions regarding the extent to which behaviors associated with teaching adults are teacher centered versus learner centered;

4. Perceptions regarding the extent to which behaviors associated with sensitivity and inclusion in teaching adults are exhibited;

5. Responses to open ended questions relating to possible concerns of OCES faculty and program staff related to their perceptions of their role as an adult educator. (not used in this study);

6. Demographic information on each respondent concerning the program area in which they spend the greatest portion of their time, their current professional position within OCES, the total number of years employed by Extension, the highest education degree achieved, major area
of study, the number of formal adult education classes taken, number of
years of professional teaching experience outside of the Cooperative
Extension Service, gender and age.

The questionnaire had five sections. Section I was designed to collect information
from subjects related toward their perceptions of their role as an educator of adults. A
Likert-type scale with fifteen statements related to an Extension professionals’ role as an
adult educator was used. For example, question one reads:

"The term that best describes my job is adult educator."

Subjects were instructed to circle the response that best represented their
agreement or disagreement with the item. The following scale was used:

SD = Strongly Disagree
D = Disagree
U = Undecided
A = Agree
SA = Strongly Agree

The values assigned to this scale ranged from 1 = strongly disagree through 5 =
strongly agree. The values of each of the items were summed and a mean score was then
determined.

In Section II of the instrument, the items pertained to the subjects’ level of
knowledge and understanding related to principles of adult learning. Subjects were asked
to agree or disagree by circling the appropriate response of ten statements related to the
practice of adult education. The content of the statements was taken from current
literature available in adult education. An example of a question in Section II -
Knowledge, is:

"Similar to children, adults also have separate stages in the life cycle which include the attainment of certain skills and social roles."

Subjects perceptions of their behavior or practice of teaching style of adults was measured using two different scales. These scales comprise Sections III and IV of the instrument respectively. The instrument used in Section III was a modified version of the Principles of Adult Learning Scale, (PALS). PALS has been widely used in adult education to assess teaching style. It is a 44 item modified Likert-type scale. Subjects were asked to indicate the frequency with which they practice the actions described in each item based on the following scale:

<table>
<thead>
<tr>
<th>Ne ver</th>
<th>Almost Never</th>
<th>Seldom</th>
<th>Often</th>
<th>Almost Always</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Figure 2

Six-Point Likert-Type Scale

Scores on PALS may range from 0 to 220. The mean score for the instrument is 146 with a standard deviation of 20. The normative scores for PALS are based on cases drawn from a variety of institutional settings in different areas of the United States. These included educators from full and part-time adult basic education programs (ABE), allied health personnel, training directors and Cooperative Extension agents in Illinois, Washington and Texas. These normative scores for PALS have remained consistent
across various groups that practice adult education (Conti, 1983).

The PALS instrument is based upon principles found in current adult education literature. The score derived provides an indication of the subjects' overall preference of a teaching style in an adult education setting. A higher score on PALS indicates a learner-centered approach, while a lower score indicates a teacher-centered approach. A respondents' score on the PALS instrument was determined by summing the value of the responses to all items. Items that were negatively worded were reversed scored so that the higher numbers indicated a more learner-centered approach. The difference in approaches reflects the amount of authority shared by the learner and the teacher in designing and implementing learning experiences.

In order to have meaning the score achieved must be interpreted. The score an individual receives on PALS is an indicator of overall teaching style and strength of commitment to that style. High scores, those above the 146 average, indicate a predilection toward the collaborative or learner-centered approach; lower scores, suggest a tendency toward the teacher-centered approach. The strength of commitment to a particular style is interpreted by the number of standard deviations in which the score obtained falls. Ranges fall between extreme commitment to a style ( 3 standard deviations or 40 points from the mean) to very strong and consistent support of a particular style ( 2 standard deviations or a score that is 20 - 40 points from the mean), to those individuals within 20 points or one standard deviation of the mean who show an increased commitment to a specific style (Conti. 1990, p. 83).

In order to be able to identify the specific classroom behaviors that make up an individuals' teaching style, PALS is divided into seven factors that are consistent with the literature that describe the collaborative mode. Each factor consists of four or more
statements that make up one of the major components of teaching style. The titles of each of the seven factors reflect one of the major components. A listing of the seven factors and a brief description that supports that collaborative mode as defined by Conti, (1990, p. 84-86) is as follows:

1. "Learner-Centered Activities" - items relate to evaluation by formal tests and to comparison of students to an outside standard. In a collaborative mode the focus is on the learner and the educator practices behaviors that allow action initiated by the student and encourages the student to accept responsibility for their own learning.

2. "Personalizing Instruction" - The collaborative teacher utilizes a variety of approaches that personalize learning in order to meet the unique demands of each student. Approaches include, development of objectives based on individual abilities, self-paced instruction, and use of a variety of methods, and materials.

3. "Relating to Experience" - Learning activities are planned that take into account the students' prior experiences and students are encouraged to relate new experiences to their past experiences. Learning activities as designed to relate to everyday problems, as well as encourage students to engage in critical reflection.

4. "Assessing Student Needs" - the collaborative teacher recognizes and treats the student as an adult and through a variety of formal and informal interactions determines what each student wants or needs to know.

5. "Climate Building" - involved the elimination of barriers to learning by establishing an environment that is friendly and informal. Risk taking is encouraged and acceptance of errors as a natural part of the learning process is favored.

6. "Participation in the Learning Process" - relates to the level of authority exhibited in the classroom and specifically considers the amount of involvement of the
student in deciding the nature and evaluation of the content material. High levels of student involvement in decision-making about the program is encouraged.

7. "Flexibility for Personal Development" - explores the roles of the teacher as provider of knowledge versus facilitator. To a facilitator, the main goal of education is personal fulfillment. This is accomplished through flexibility and the ability to adjust curriculum and environment to meet the changing needs of students.

Identification of scores for each of the factors assists in identifying the specific elements that make up this style (see Figure 3).

Factors:

Factor 1 (learner-centered activities)
contains items 27, 29, 36, 37, 38, 41, 44, 46, 54, 55, 63, 65

Factor 2 (personalizing instruction)
contains items 28, 34, 42, 49, 57, 60, 60, 62, 66, 67

Factor 3 (relating to experience)
contains items 39, 56, 59, 64, 68, 69

Factor 4 (assessing student needs)
contains items 30, 33, 48, 50

Factor 5 (climate building)
contains items 43, 45, 47, 53

Factor 6 (participation in the learning process)
contains items 26, 35, 40, 61

Factor 7 (flexibility for personal development)
contains items 31, 32, 51, 52, 58

Figure 3
PALS Scoring
Items in this instrument were numbered consecutively and no indication was given to subjects that differing factors existed in the scale or where these divisions were located.

The PALS instrument was chosen because of the dimensions that it measured and because it has been identified as a reliable and valid instrument in the field of adult education. Although it was originally designed primarily for use in Adult Basic Education (ABE) programs, it has been used successfully with Extension audiences throughout the United States. The PALS instrument was modified for use in this study by rewording statements so that they read more like an Extension educator than a classroom instructor. For example, in many statements, student was changed to participant and classroom to program. Examples of statements modified from the original PALS instrument are below.

The original statement is given first, and the modification is below it in bold face.

"I get a student to motivate himself/herself by confronting him/her in the presence of classmates during group discussions."

"When I teach adults, I encourage an individual to motivate himself/herself by confronting him/her in the presence of others during group discussions."

"I arrange the classroom so that it is easy for students to interact."

"When I teach adults, I arrange the meeting room so that interaction among participants is facilitated."

Five questions of the PALS instrument were totally rewritten to apply to Cooperative Extension audiences. This was accomplished with the assistance of the author of PALS, Dr. Gary Conti, to ensure that the meaning or constructs to be measured were not altered.
The second measurement of the subjects' teaching style was assessed in Section IV using the Van Tilburg/Heimlich Sensitivity-Inclusion Instrument. Sensitivity measures how aware the instructor is to the needs and concerns of his/her students. Inclusion measures to what extent the instructor involved his/her students in planning and designing their own learning experiences. A two-step process incorporating both qualitative and quantitative investigation was utilized to operationalize the constructs of sensitivity and inclusion and to develop a quantifiable instrument. An interview schedule was set with four purposefully selected educators involved in teaching adults. Questions related to beliefs, attitude, and behavior associated with adult education settings were explored, resulting in 219 statements. These statements were submitted to a panel of experts to determine content validity. The content analysis found ten trends in the data that is consistent with other findings in adult education literature. Seven of these were found to relate to sensitivity or inclusion as defined. Trends related to sensitivity included: needs of the educator, needs of the student, background to the student, and role of the educator as Model. Trends related to inclusion were: motivation to learn, role of the educator in learning, and directing the learning process. Thirty-four faculty members and graduate students involved in previously or currently teaching adults participated in an additional validity check of identifying each statement as relating to sensitivity or inclusion. Binomial tests factor analysis conducted provided information on each that indicated whether the item represented sensitivity or inclusion and indicated the underlying construct(s) contributing to the score on that item. Six factors accounting for 51.8 percent of the variance emerged as a result of the factor analysis. Factors related to the dimension of Sensitivity included: 1) Basis for Instructional Method, 2) Educator's Perception of Students, 3) Educator's Perception of Self, and 4) Educator's Perception of Student Needs. The two factors related to inclusion were:
1) Group Process, and 2) Classroom Methods. Van Tilburg and Heimlich noted that "sensitivity factors related to the way an educator feels and the inclusion factors seem to be related to how educator puts into practice those feelings." (p. 241).

Two Thurstone equal-appearing interval instruments (one for sensitivity and one for inclusion) were developed based on the results of the quantitative analysis. Eleven items, based on the ratings of the panel of experts, were chosen for each scale. Each item represents an interval point on the scale. Individuals administered the instrument receive a mean score between one and eleven on each instrument. The individuals' score places them on a low/high continuum which, when crossed with the other, creates the quadrants of a two-by-two matrix. The quadrant names are low (inclusion) - low (sensitivity), EXPERT; low-high, PROVIDER; high-low, FACILITATOR, and high-high, ENABLER. Because the instrument is an eleven point scale, an area known as the "neutral zone" was created by individuals scoring 6.0 - 7.9 on each scale. (Appendix A). According to Van Tilburg and Heimlich (1990), "placement in this location of the matrix, indicates an uncertainty in preference or lack of clarity or predictability in performance, but clarity on inculturated socially desirable teaching behavior."

Selected demographic characteristics on each respondent was obtained in Section V of the instrument.

**Major Program Area Responsibility** was measured as either: 1) Agriculture; 2) Home Economics; 3) 4-H; 4) Community/Natural Resource Development; and 5) Other. The level of measurement for this characteristic was nominal.

**Current Professional Position Held in Ohio Cooperative Extension Service** was measured as either: 1) EFNEP Staff; 2) Program Assistant; 3) Extension Associate; 4) County Agent; 5) Area/District Specialist; 6) State Specialist; 7) District Director;
8) State Administrator; and 9) Other. The level of measurement for this characteristic was nominal.

Total Number of Years Employed by the Cooperative Extension Service was measured as either: 1) Less than 1 year; 2) 1-3 years; 3) 4-7 years; 4) 8-10 years; 5) 11-15 years; and 6) more than 15 years. The level of measurement for this characteristic was ordinal.

Highest Educational Degree Obtained was measured by either: 1) High School/GED; 2) Bachelors Degree; 3) Masters Degree; and 4) Ph.D Degree. The level of measurement for highest educational degree was ordinal.

Academic Major in Highest Educational Degree was measured by either:
1) Education (Including Extension Education, Agricultural Education, Home Economics Education, Environmental Education, Adult and Continuing Education or General Education. 2) Home Economics (Including Nutrition, Family Resource Management, Clothing and Textiles, Home Furnishings, Equipment, or Family Relations and Human Development. 3) Agriculture (Including Animal Science, Dairy Science, Poultry Science, Agronomy, Horticulture, Agricultural Engineering, or Agricultural Economics. 4) Natural Resources or Biology (Including Entomology, Biochemistry, Plant Pathology, Forestry or Ecology. 5) Social Science, Rural Sociology, Sociology, Psychology, Community Development, or Youth Studies. and 6) Other. The level of measurement for this characteristic was nominal.

Formal Instruction in Adult Education was measured by both the topic area of study and the number of formal classes completed in each area. Subjects were instructed to respond by circling those categories in which they had taken formal classes as well as indicate the number of actual classes completed. Topics or areas of study within adult
education included: 1) Philosophy of Adult Education; 2) Teaching Methods Related to
the Adult Learner; 3) Adult Characteristics and Learning Theory; 4) Organization and
Administration of Adult Education Programs; 5) Program Planning in Adult Education;
and 6) Other. The level of measurement for the topic areas of study in adult education
was nominal. The level of measurement for the actual number of classes completed in
each topic was interval.

**Professional Teaching Experience Outside of the Cooperative Extension Service**
was measured by either; 1) no; or 2) yes. The level of measurement for this
characteristic was nominal. If subjects responded affirmatively, they were asked to
indicate the **number of years of teaching experience outside the Cooperative Extension**
Service with either: A) Youth; or B) Adults. The level of measurement for the
characteristic of number of years of teaching experience outside of Cooperative Extension
was interval.

**Gender** measured as either: 1) male; or 2) female. The level of measurement
for this category was nominal.

**Age** of subjects was either: 1) 20-25 years; 2) 26-30 years; 3) 31-40 years; 4) 41-
50 years; or 5) 51 and over. The level of measurement for the characteristic of age was
ordinal.

In survey research, internal validity is concerned with the accuracy of the data
which has been generated. The main threat to the internal validity of this study was
controlling for error in measurement. Measurement error of survey research can relate to:
1) structure and sequence of the questionnaire, including; type of questions, wording,
length of the questionnaire and the circumstances of the questionnaire, 2) method of
administration, and 3) respondent errors, including; misunderstanding of questions,
carelessness, lying and lack of correct information. To control for measurement error, a panel of experts in the fields of Extension Education and Adult Education (Appendix B) were asked to review the items in the questionnaire for content validity. The questionnaire was given to 15 individuals. Eleven of these were returned and found to be usable. Alterations were made according to the suggestions of the panel on specific items as well as instructions and information provided. A major revision suggested by most of the panel was to reduce the length of the instrument. Selection of which items to eliminate were based on the comments from the panel as well as the analysis conducted (Kuder-Richardson 20 and Cronbach's Alpha) to determine the degree of reliability or internal consistency of the instrument.

Once the appropriate revisions had been made, the questionnaire was distributed in draft form to graduate students and selected professionals in Extension Education and Adult Education as a pilot test. This particular audience was chosen as a pilot group because it was felt they exhibited similar characteristics to the targeted population for study. A total of 17 pilot questionnaires were distributed. Fifteen were returned and usable. Internal consistency of the results generated by the instruments was calculated using Cronbach's Alpha and the KR20. An acceptable value for the Cronbach's alpha and KR20 was established a priori at .65. This is considered a moderate level. This level was chosen based on Numally (1967), who reports that in the early stages of research on predictor tests or hypothesized measures of construct, one saves time and energy by working with reliabilities that have only modest reliability, for which purpose reliabilities of .50 or .60 will suffice.

The Cronbach's alpha coefficients were calculated on Section I of the instrument for the measurement regarding role as an adult educator using the SPSS-PC+ computer
program. Section I of the pilot test contained 18 items. The Cronbach’s Alpha coefficients using all 18 items was very low and unacceptable. Additional calculations were made by dropping the number of usable items. An acceptable level of .69 was achieved when the Section was reduced to 15 items. Section II of the instrument was a summated scale of 20 items measuring the domain of knowledge. Since the scale was dichotomous in nature (agree/disagree) the Kuder-Richardson 20 (KR20) test for internal consistency was used. Calculations for the KR20 were determined using the SPSS-PC+ computer program. The coefficients determined on the original 20 items were low and unacceptable. An acceptable alpha level of .72 was achieved when the number of items in Section II was reduced to ten.

The retest method was used to determine reliability of the PALS instrument. Reliability was established by retesting a group of 23 adult basic education practitioners after a seven day interval. The data generated from the test and retest were used to calculate a Pearson correlation of .92 which measured PALS’ reliability and which provided an estimate of the degree of confidence for generalizing from the score a person received at one time on PALS to what that individual could expect to receive if the instrument had been given at a different time. (Conti, 1978, p. 68.) The Van Tilburg/Heimlich Sensitivity/Inclusion Measure was deemed reliable using the parallel forms procedure. For this measure, the same population (n = 16) completed similar forms of the instrument within a few weeks of one another. A coefficient of equivalence (.72) was produced when the two sets of scores obtained were correlated (Sec Table 3).
Table 3

Summary of Reliability Analysis for Van Tilburg/Hemilich Sensitivity and Inclusion Measure

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parallel Form 1</td>
<td>17</td>
<td>8.69</td>
<td>.92</td>
</tr>
<tr>
<td>Parallel Form 2</td>
<td>16</td>
<td>8.31</td>
<td>1.20</td>
</tr>
</tbody>
</table>

coefficient of equivalence = .7216

Data Collection Procedures

Procedures outlined in the Total Design Method For Surveys recommended by Dillman (1978) were used to collect data. Questionnaires were mailed on January 9, 1990. A cover letter co-signed by Dr. Keith Smith, Associate Director, Ohio Cooperative Extension Service and Dr. Emmalou Norland, Leader, Evaluation, Ohio Cooperative Extension Service accompanied the questionnaire (Appendix C). A self-addressed stamped envelope was enclosed with each questionnaire to county and district faculty and staff to use when returning their questionnaire. Faculty, program staff and administration on The Ohio State University campus received an addressed envelope with no stamp, as their questionnaire could be returned through the campus mail system at no cost. The initial deadline for returning the questionnaire was January 25, 1990. The response rate by this deadline was 59.4 percent with a total of 362 returned questionnaires.

Instruments mailed were identified with an identification number on the upper right hand corner of the first page. This number was used to identify and follow-up with non-respondents. Two subsequent follow-ups were conducted. On February 8, 1990, a
second complete packet, including an instrument, cover letter, and return envelope was mailed to all non-respondents. The deadline for return was February 26, 1990. By this deadline a total of 423 questionnaires for a response rate of 69.4 percent had been received.

Additional questionnaires were received after the final deadline for return of February 26, 1990, and before the data were entered for analysis. By including these questionnaires, a total of 453 questionnaires were received for a response rate of 74.9 percent.

The resulting data sample was comprised of: 102 State Specialists, State Administration and State Administrative Professionals, 32 District Specialists and Administrators, 171 county agents, 42 Extension Associates, 53 Program Assistants, and 53 Nutrition Educators with the Expanded Food and Nutrition Education Program.
Table 4

Usable Data Sample by Position

<table>
<thead>
<tr>
<th>Position</th>
<th>Number</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFNEP</td>
<td>53</td>
<td>11.7</td>
</tr>
<tr>
<td>Program Assistants</td>
<td>53</td>
<td>11.7</td>
</tr>
<tr>
<td>Extension Associates</td>
<td>42</td>
<td>9.3</td>
</tr>
<tr>
<td>County Agents</td>
<td>171</td>
<td>37.7</td>
</tr>
<tr>
<td>District Specialists/Directors</td>
<td>32</td>
<td>7.1</td>
</tr>
<tr>
<td>State Specialists/Administration/Other</td>
<td>102</td>
<td>22.5</td>
</tr>
</tbody>
</table>

Grand Total 453 100.0

Final Usable Response Rate = 74.9 percent

Data Analysis

The SPSS-PC+ computer program was used to analyze data. Descriptive statistics were first used to summarize and organize the data. The first objective of this study was to describe the faculty and program staff of the Ohio Cooperative Extension Service on selected characteristics. Frequencies, percentages, measures of central tendency and variability were used to describe the data.

A second purpose of this study was to determine the extent that relationships exist between selected characteristics. Table 5 describes each of the characteristics used in this study by operational definition and type of data. Cramers V, point biserial,
Kendalls Tau B, Kendalls Tau C, and Pearson r correlation coefficients were calculated. (see Tables 6 and 7). Measures of Association were used to determine the nature and strength of the relationships between variables. Davis' (1971) conventions for describing measures of association were used. These conventions are provided in Figure 4.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.70 or higher</td>
<td>Very Strong Association</td>
</tr>
<tr>
<td>.50 to .69</td>
<td>Substantial Association</td>
</tr>
<tr>
<td>.30 to .49</td>
<td>Moderate Association</td>
</tr>
<tr>
<td>.10 to .29</td>
<td>Low Association</td>
</tr>
<tr>
<td>.01 to .09</td>
<td>Negligible Association</td>
</tr>
</tbody>
</table>

Source: Davis, 1971

Figure 4

Conventions Used to Describe Measures of Association

Stepwise multiple regression was used to determine the best predictor(s) of the dependent variable, "extent to which behaviors associated with teaching adults are learner-centered or teacher-centered." According to Warmbrod (1988, p. 13), "stepwise regression is most appropriately used when the research goal is primarily predictive rather than explanatory." Characteristics entered into the stepwise regression model were selected based on the size of the correlation coefficient. The dependent variable for the regression model in this study was the total score on PALS. The antecedent characteristics entered
into the regression model included: attitude score, knowledge score, number of adult education classes taken, number of years teaching outside Extension, academic major in highest degree, gender, score on sensitivity and score on inclusion. The total $R^2$ was computed to determine the amount of variance accounted for by the linear combination of antecedent characteristics.
Table 5

Description of Characteristics, Including Operational Definition and Type of Data

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Operational Definition</th>
<th>Type of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>10 items - sum of # correct</td>
<td>Interval</td>
</tr>
<tr>
<td>Attitude</td>
<td>Mean sum of 15 items</td>
<td>Interval</td>
</tr>
<tr>
<td>Sensitivity/Inclusion</td>
<td>Sum of # of items checked</td>
<td>Interval</td>
</tr>
<tr>
<td>PALS</td>
<td>Sum of 44 items</td>
<td>Interval</td>
</tr>
<tr>
<td>PALS - 1</td>
<td>Sum of 12 items</td>
<td>Interval</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Interval</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Interval</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Interval</td>
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<td>Interval</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Interval</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Interval</td>
</tr>
<tr>
<td>Program Area</td>
<td>5 categories</td>
<td>Nominal</td>
</tr>
<tr>
<td>Professional Position</td>
<td>9 categories</td>
<td>Nominal</td>
</tr>
<tr>
<td># of Years Employed</td>
<td>6 ranked categories</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Highest Degree</td>
<td>4 categories</td>
<td>Ordinal</td>
</tr>
<tr>
<td>Academic Major</td>
<td>6 categories</td>
<td>Nominal</td>
</tr>
<tr>
<td># Adult Education Classes</td>
<td>Number of Classes</td>
<td>Interval</td>
</tr>
<tr>
<td>Teaching Experience</td>
<td>Number of Years</td>
<td>Interval</td>
</tr>
<tr>
<td>Outside Extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>2 Categories</td>
<td>Nominal</td>
</tr>
<tr>
<td>Age</td>
<td>5 ranked categories</td>
<td>Ordinal</td>
</tr>
</tbody>
</table>
Table 6

Statistics Utilized for Selected Characteristics, Type of Data and Their Relationship with Knowledge, Attitude, Sensitivity, and Inclusion *

<table>
<thead>
<tr>
<th>Selected Characteristics</th>
<th>Data</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Program Area</td>
<td>Nominal</td>
<td>Cramers V</td>
</tr>
<tr>
<td>Professional Position</td>
<td>Nominal</td>
<td>Cramers V</td>
</tr>
<tr>
<td># Years Employed</td>
<td>Ordinal</td>
<td>Kendalls Tau B**</td>
</tr>
<tr>
<td>Highest Degree</td>
<td>Ordinal</td>
<td>Kendalls Tau B**</td>
</tr>
<tr>
<td>Academic Major - Highest Degree</td>
<td>Nominal</td>
<td>Cramers V</td>
</tr>
<tr>
<td># Adult Education Classes</td>
<td>Interval</td>
<td>Pearson r</td>
</tr>
<tr>
<td># Years Teaching Experience</td>
<td>Interval</td>
<td>Pearson r</td>
</tr>
<tr>
<td>Gender</td>
<td>Nominal</td>
<td>Point biserial</td>
</tr>
<tr>
<td>Age</td>
<td>Ordinal</td>
<td>Kendalls Tau B**</td>
</tr>
</tbody>
</table>

* characteristics converted from interval to nominal categories (except gender)

** Knowledge categories reported as Kendalls Tau C
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Data</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Interval</td>
<td>Pearson r</td>
</tr>
<tr>
<td>Attitude</td>
<td>Interval</td>
<td>Pearson r</td>
</tr>
<tr>
<td>Program Area</td>
<td>Nominal</td>
<td>Cramers V</td>
</tr>
<tr>
<td>Professional Position</td>
<td>Nominal</td>
<td>Cramers V</td>
</tr>
<tr>
<td># Years Employed</td>
<td>Ordinal</td>
<td>Kendalls Tau B</td>
</tr>
<tr>
<td>Highest Degree</td>
<td>Ordinal</td>
<td>Kendalls Tau B</td>
</tr>
<tr>
<td>Academic Major</td>
<td>Nominal</td>
<td>Cramers V</td>
</tr>
<tr>
<td># Adult Education Classes</td>
<td>Interval</td>
<td>Pearson r</td>
</tr>
<tr>
<td># Years Teaching</td>
<td>Interval</td>
<td>Pearson r</td>
</tr>
<tr>
<td>Gender</td>
<td>Nominal</td>
<td>Point biserial</td>
</tr>
<tr>
<td>Age</td>
<td>Ordinal</td>
<td>Kendalls Tau B</td>
</tr>
</tbody>
</table>
Chapter IV

FINDINGS AND CONCLUSIONS

Purpose of the Study

The primary purpose of this study was to describe the factors related to the perceived behaviors of teaching adults of the Ohio Cooperative Extension faculty and program staff as measured by scores on the Principles of Adult Learning Scale. Additionally, this study sought to look at two additional measurements predictive of teaching behavior: sensitivity and inclusion. Sensitivity and inclusion are measured by the Van Tilburg/Heimlich measure. Also examined was the respondents attitude toward their role as an adult educator and their knowledge regarding basic adult education principles and practices.

Variables and Objectives of the Study

The following dependent variable and antecedent characteristics were used in the study:

I. Dependent Variable:

   A. Scores on the Principles of Adult Learning Scale (PALS) as indicated by:
      - Total or summated score
      - Scores on each of the 7 factors or elements that comprise the total score

II. Antecedent Characteristics:

   A. Attitude toward perceived role as an adult educator

   B. Knowledge of basic adult education principles and practices
C. Sensitivity of the instructor to the needs/concerns of clientele/students

D. Inclusion by the instructor of clientele/students in the design of their own learning experiences

E. Demographic Variables:

1. Major Program Area of Responsibility
2. Current Professional Position Within OCES
3. Number of Years Employed by Cooperative Extension Service
4. Highest Educational Degree Achieved
5. Academic Major in Highest Degree Area
6. Total Number of Adult Education Classes Taken
7. Professional Teaching Experience Outside of Cooperative Extension
8. Gender
9. Age

III. Objectives of the Study

The following research objectives were established as a guide for the study.

1. To describe the faculty and program staff of the Ohio Cooperative Extension Service on the following characteristics:

   A. Attitude toward perceived role as an adult educator
   B. Knowledge of basic adult education principles and concepts possessed
   C. The extent to which behaviors associated with teaching adults exhibit sensitivity as measured by the Van Tilburg/Heimlich Sensitivity/Inclusion Scale
   D. The extent to which behaviors associated with teaching adults exhibit inclusion as measured by the Van Tilburg/Heimlich Sensitivity/Inclusion Scale
   E. The extent to which behaviors associated with teaching adults are teacher-centered or learner-centered as measured by mean scores on the Principles of Adult Learning Scale
   F. The extent to which the specific element that determine perceived teaching style contribute as measured by mean scores on each of the seven factors that comprise the Principles of Adult Learning Scale:
      - Learner Centered Activities
      - Personalizing Instruction
      - Relating to Experience
      - Assessing Student Needs
      - Climate Building
      - Participation in the Learning Process
      - Flexibility for Personal Development

G. Major Program Area of Responsibility
H. Current Program Position Within OCES
I. Length of Service with Extension
J. Highest Educational Degree Achieved
K. Academic Major in Highest Degree
L. Total Number of Formal Adult Education Classes Taken
M. Professional Teaching Experience Outside of Extension
N. Gender
O. Age

2. To describe the relationship between antecedent characteristics, specifically:

   A. Perceived degree of Sensitivity, Inclusion, Knowledge and Attitude and the characteristics of:
      1. Major Program Area of Responsibility
      2. Current Program Position within OCES
      3. Length of Service with Extension
      4. Highest Education Degree Achieved
      5. Academic Major in Highest Degree
      6. Total Number of Formal Adult Education Classes Taken
      7. Professional Teaching Experience Outside of Extension
      8. Gender
      9. Age

   B. Perceived degree of Sensitivity and Inclusion and Attitude

   C. Perceived degree of Sensitivity and Inclusion and Knowledge

3. To describe the relationship between all antecedent characteristics and the dependent variable.

4. To determine the best predictor(s) of the dependent variable, "perceived teaching style as measured by PALS."

Subject Selection

To obtain the most accurate results possible, a census was utilized to gather information from the target population. The target population to which the results were to be generalized included all Ohio Extension faculty and program staff. A listing of names and addresses was obtained from the Leader, Personnel of OCES. All full and part-time
State and District Administrators, State and District Specialists, Extension Agents, Extension Associates, Program Assistants, Expanded Food and Nutrition Educators and Administrative Professionals (other) employed as of January 1, 1990, were surveyed using a mail questionnaire. The mail questionnaire consisted of five parts that measured all variables. (A complete description of the instrumentation is described in Chapter 3). The total number of subjects utilized in the study was 453.

Major Findings

Objective 1: To describe the faculty and program staff of the Ohio Cooperative Extension Service on all characteristics.

Tables 8 through 32 present information which describe the OCES faculty and program staff on the antecedent characteristics used in this study. Frequencies, percentages and measures of central tendency and variability were used to describe the characteristics.

Demographic Variables

Major Program Area of Responsibility

Table 8 displayed the data regarding the variable "major program area of responsibility." Agriculture was identified by 132 respondents (30.1 percent) as their program area of primary responsibility. Agriculture was followed by 4-H as program area
of responsibility with 27.6 percent (121) of the respondents. A total of 26.9 percent (118) of the respondents identified Home Economics as the area of primary responsibility. The remaining 15.3 percent identified CNRD (24) and Other (43), including Administrative Professionals as the program area of primary responsibility.

Table 8

Frequency Distribution of Major Program Area of Responsibility

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>132</td>
<td>30.1</td>
</tr>
<tr>
<td>4-H</td>
<td>121</td>
<td>27.6</td>
</tr>
<tr>
<td>Home Economics</td>
<td>118</td>
<td>26.9</td>
</tr>
<tr>
<td>CNRD</td>
<td>24</td>
<td>5.5</td>
</tr>
<tr>
<td>Other</td>
<td>43</td>
<td>9.8</td>
</tr>
</tbody>
</table>

Grand Total 438 100.0

Current Position Within OCES

The frequency distribution of the current positions of members in the data sample within OCES can be found in Table 9. Of the 452 subjects that comprise the data sample 70.5 percent (319) were county personnel (Agents, Extension Associates, Program Assistants, and EFNEP Educators) and the remaining 29.5 percent (133) were State
District Administrators, Specialists or Others. County Extension Agents comprised the largest category with 37.8 percent (171) individuals. The next largest category of respondents was that of State Administrators/Specialists/Other with a total of 22.3 percent (101). Individuals reporting their Extension position of Extension Associate (42), Program Assistant (53) and Expanded Food and Nutrition Educators (EFNEP) (53) collectively comprised 32.7 percent of the data sample. The remaining 9.3 percent of the respondents reported their current position as either District Specialist or District Administrator.

Table 9

Frequency Distribution for Current Position Within OCES

<table>
<thead>
<tr>
<th>Extension Position</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Administrators/Specialists/Other</td>
<td>101</td>
<td>22.4</td>
</tr>
<tr>
<td>District Specialists/Administrators</td>
<td>32</td>
<td>7.1</td>
</tr>
<tr>
<td>County Extension Agents</td>
<td>171</td>
<td>37.8</td>
</tr>
<tr>
<td>Extension Associates</td>
<td>42</td>
<td>9.3</td>
</tr>
<tr>
<td>Program Assistants</td>
<td>53</td>
<td>11.7</td>
</tr>
<tr>
<td>EFNEP</td>
<td>53</td>
<td>11.7</td>
</tr>
<tr>
<td>Total County Personnel</td>
<td>319</td>
<td>70.5</td>
</tr>
<tr>
<td>Total State/Dist. Personnel</td>
<td>133</td>
<td>29.5</td>
</tr>
<tr>
<td>Grand Total</td>
<td>452</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Years Employed by Extension

The 446 individuals responding were fairly evenly distributed regarding their reported length of employment with OCES. The majority of the respondents, totaling 27.6 percent (123), indicated their length of service as more than 15 years. Almost 16 percent (71) indicated they had been employed 11-15 years, over 13 percent fell into the categories of 8 to 10 years (59), and another 13.5 (60) percent in the 4 to 7 years category. A total of the 18.4 percent (82) reported their length of service as 1 to 3 years. The smallest category of respondents comprising 11.4 percent (51) indicated that they had worked for OCES less than one year. (See Table 10).

Table 10

<table>
<thead>
<tr>
<th>Number of Years Employed</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than 1 Year</td>
<td>51</td>
<td>11.4</td>
<td>11.4</td>
</tr>
<tr>
<td>1-3 Years</td>
<td>82</td>
<td>18.4</td>
<td>29.8</td>
</tr>
<tr>
<td>4-7 Years</td>
<td>60</td>
<td>13.5</td>
<td>43.3</td>
</tr>
<tr>
<td>8-10 Years</td>
<td>59</td>
<td>13.2</td>
<td>56.5</td>
</tr>
<tr>
<td>11-15 Years</td>
<td>71</td>
<td>15.9</td>
<td>72.4</td>
</tr>
<tr>
<td>More Than 15 Years</td>
<td>123</td>
<td>27.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

| Grand Total             | 446       | 100.0   | 100.0              |
Highest Education Degree Achieved

A total of 53.4 percent (236) reported that the highest educational degree they had achieved was a Master's degree, followed by the Bachelor's degree with 17.4 percent (77). The Doctoral degree was reported by 14.7 percent (65) as the highest educational degree obtained and a High School diploma or GED equivalent by the remaining 14.5 percent (64). (See Table 11).

Table 11

Frequency Distribution for Highest Education Degree Achieved

<table>
<thead>
<tr>
<th>Highest Educational Degree</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School/GED</td>
<td>64</td>
<td>14.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Bachelors Degree</td>
<td>77</td>
<td>17.4</td>
<td>31.9</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>236</td>
<td>53.4</td>
<td>85.3</td>
</tr>
<tr>
<td>Ph.D Degree</td>
<td>65</td>
<td>14.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Grand Total</td>
<td>442</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Academic Major in Highest Degree

Education was the most frequently identified academic major in highest educational degree area. Education, which includes, Extension Education, Agricultural Education, Home Economics Education, Environmental Education, Adult and Continuing Education or General Education was reported by 43.6 percent (166) of the 381
respondents. Agriculture was identified by 21.8 percent (83) of the individuals reporting, followed by Home Economics with 17.3 percent (66). The remaining 17.3 percent included individuals reporting Social Science (16) which includes rural sociology, sociology, psychology, community development and youth studies; Natural Resources/Biology (24) and the Other (26) category for majors not included in any of the above. (see Table 12). Individuals reporting that their highest educational degree was High School/GED (64) did not report an academic major for highest educational degree.

Table 12

Frequency Distribution for Academic Major in Highest Degree

<table>
<thead>
<tr>
<th>Academic Major</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>166</td>
<td>43.6</td>
</tr>
<tr>
<td>Home Economics</td>
<td>66</td>
<td>17.3</td>
</tr>
<tr>
<td>Agriculture</td>
<td>83</td>
<td>21.8</td>
</tr>
<tr>
<td>Natural Resources/Biology</td>
<td>24</td>
<td>6.3</td>
</tr>
<tr>
<td>Social Science/Rural Sociology, Sociology/Psychology/Community Development/Youth Studies</td>
<td>16</td>
<td>4.2</td>
</tr>
<tr>
<td>Other</td>
<td>26</td>
<td>6.8</td>
</tr>
<tr>
<td>Grand Total</td>
<td>381</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Number of Formal Adult Education Classes Taken

The frequency distribution for the number of formal adult education classes taken was displayed in Table 13. A total of 52.3 percent of the 451 respondents reported having taken no formal classes in the field of adult education. The next highest category, with 27.7 percent, was those individuals reporting that they had taken between one and four formal adult education classes. The remaining twenty percent was split between the last two categories of five to ten classes (14.9 percent) and eleven or more classes (5.1 percent).

Table 13

<table>
<thead>
<tr>
<th>Number of Classes Taken</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>236</td>
<td>52.3</td>
<td>52.3</td>
</tr>
<tr>
<td>1 - 4</td>
<td>125</td>
<td>27.7</td>
<td>80.0</td>
</tr>
<tr>
<td>5 - 10</td>
<td>67</td>
<td>14.9</td>
<td>94.9</td>
</tr>
<tr>
<td>11 or more</td>
<td>23</td>
<td>5.1</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>451</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mean = 2.41  
Median = 0.00  
Mode = 0.00  
Standard deviation = 4.01
Additionally, categories were broken down by the emphasis or content of the class which included philosophy of adult education, teaching methods, adult characteristics/learning theory, organization and administration of adult programs, program planning and other. Table 14 displayed the frequency distribution for types of formal adult education classes taken. In all categories, the largest percentage of respondents indicated that they had no formal training in adult education classes. In the category of Philosophy of Adult Education, 71.7 percent (324) of the 452 respondents indicated that they had taken zero classes, followed by 25.9 percent (117) that indicated that they had taken 1 or 2 classes. Only 2.4 percent (11) of the respondents indicated that they had taken 3 or more classes in the category of Philosophy of Adult Education. More individuals had taken some formal training in the area of teaching methods. Only 63.7 percent (288) indicated that zero classes had been taken in this area, while 30.8 percent (139) of the respondents indicated that they took one or two classes. Less than 6 percent (25) have taken 3 or more classes in teaching methods related to adult learners. Almost 78 percent (352) of the 452 individuals responding reported that they had not taken any classes related to adult characteristics/learning theory, followed by nearly 20 percent (92) who had received training through one or two classes. Only 2 percent (9) had taken 3 or more classes on this topic. Of the 451 individuals reporting on classes taken in the area of organization and administration of adult program, 77.6 percent (350) indicated that they had not taken any classes, followed by 18.9 percent (85) that indicated they had taken 1 or 2 formal classes and 3.5 percent (16) that had taken 3 or more. In the category of Program Planning for adults, 73.2 percent (330) reported having taken no classes. Those indicating that they had taken 1 or 2 classes represented 24.4 percent (110) of the respondents, while those taking 3 or more classes comprised only 2.4 percent (11) of the
data sample. Additionally, individuals were asked if they had taken adult education classes on any other topics. A majority of the respondents, representing 94.9 percent of the data sample reported taking no other classes related to adult education. The remaining 5.1 percent (23) had taken at least one additional class not previously mentioned related to adult education.

Table 14

Frequency Distribution of Types of Formal Adult Education Classes Taken

<table>
<thead>
<tr>
<th>Description</th>
<th>n</th>
<th>0</th>
<th>%</th>
<th>1-2</th>
<th>%</th>
<th>&gt;3</th>
<th>%</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy of Adult Education</td>
<td>452</td>
<td>324</td>
<td>71.7</td>
<td>117</td>
<td>25.9</td>
<td>11</td>
<td>2.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Teaching Methods</td>
<td>452</td>
<td>288</td>
<td>63.7</td>
<td>139</td>
<td>30.8</td>
<td>25</td>
<td>5.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Adult Characteristics/ Learning Theory</td>
<td>452</td>
<td>352</td>
<td>77.6</td>
<td>92</td>
<td>20.4</td>
<td>9</td>
<td>2.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Organization &amp; Admin. of Adult Programs</td>
<td>451</td>
<td>350</td>
<td>77.6</td>
<td>85</td>
<td>18.9</td>
<td>16</td>
<td>3.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Program Planning</td>
<td>451</td>
<td>330</td>
<td>73.2</td>
<td>110</td>
<td>24.4</td>
<td>11</td>
<td>2.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Other Adult Education Classes</td>
<td>452</td>
<td>429</td>
<td>94.9</td>
<td>15</td>
<td>3.4</td>
<td>8</td>
<td>1.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Teaching Experience Outside of Extension

Of the 439 respondents from the data sample, there was an almost even
distribution based teaching experience outside of Extension. Table 15 displayed the
frequency distribution showing 47.2 percent (207) of the respondents had taught outside
of Extension and 52.8 percent (232) of the respondents had only Extension teaching
experience.

The frequency distribution for the number of years teaching youth outside of
Extension was displayed in Table 16. The largest percentage fell under the category of
those with no teaching experience outside of Extension with 57.7 percent (261). For
those with outside teaching experience the largest percentage of individuals were found in
the category of one to four years with 23.7 percent (107). This was followed with five to
ten years with 12.4 percent (56) and eleven or more years with 6.2 percent (28). Fewer
respondents had teaching experience outside of Extension in teaching adults. A total of
71.1 percent (321) of all of the individuals reported no experience in teaching adults
outside of Extension. Of those with outside experience, the largest percentage of
individuals were found in the category of one to four year with sixteen percent (72). The
remaining 12.9 percent was almost equally divided between the categories of five to ten
years (27) and eleven years or more (31). (see Table 17).
Table 15

**Frequency Distribution for Professional Teaching Experience Outside of Extension**

<table>
<thead>
<tr>
<th>Outside Teaching Experience</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>207</td>
<td>47.2</td>
</tr>
<tr>
<td>No</td>
<td>232</td>
<td>52.8</td>
</tr>
<tr>
<td>Grand Total</td>
<td>439</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 16

**Frequency Distribution for Number of Years of Teaching Youth Outside Extension**

<table>
<thead>
<tr>
<th>Number of Years Teaching Youth</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>261</td>
<td>57.7</td>
<td>57.7</td>
</tr>
<tr>
<td>1 - 4 Years</td>
<td>107</td>
<td>23.7</td>
<td>81.4</td>
</tr>
<tr>
<td>5-10 Years</td>
<td>56</td>
<td>12.4</td>
<td>93.8</td>
</tr>
<tr>
<td>11 Years or more</td>
<td>28</td>
<td>6.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Grand Total</td>
<td>452</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 17

Frequency Distribution for Number of Years Teaching Adults Outside of Extension

<table>
<thead>
<tr>
<th>Number of Years Teaching Adults Outside Extension</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>321</td>
<td>71.1</td>
<td>71.1</td>
</tr>
<tr>
<td>1 - 4 Years</td>
<td>72</td>
<td>16.0</td>
<td>87.1</td>
</tr>
<tr>
<td>5 - 10 Years</td>
<td>27</td>
<td>6.0</td>
<td>93.1</td>
</tr>
<tr>
<td>11 Years or more</td>
<td>31</td>
<td>6.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Grand Total                                      451  100.0  100.0

Gender

Table 18 displayed the frequency distribution for gender. Slightly more of the 451 respondents from the data sample were female. A total of 53.7 percent (235) of the respondents were female and 46.3 percent (203) were male.
Table 18

Frequency Distribution for Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>203</td>
<td>46.3</td>
</tr>
<tr>
<td>Female</td>
<td>235</td>
<td>53.7</td>
</tr>
<tr>
<td>Grand Total</td>
<td>438</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Age

The majority of the 441 respondents in the variable "age" fell between the ages of 31 and 50 years of age. These two categories represented over 70 percent of the respondents. The largest percentage of individuals fell under the category of 31-40 years with 35.8 percent (158), followed by 41-50 years with 35.2 percent (155). The remaining 30 percent was divided between the categories. The category of 51 and over had 13.6 percent (60), followed by the category of 26-30 years, with 12.2 percent (54). The smallest category was 20-25 years with only 3.2 percent (14). (see Table 19).
### Table 19

**Frequency Distribution for Age**

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25 Years</td>
<td>14</td>
<td>3.2</td>
<td>3.2</td>
</tr>
<tr>
<td>26-30 Years</td>
<td>54</td>
<td>12.2</td>
<td>15.4</td>
</tr>
<tr>
<td>31-40 Years</td>
<td>158</td>
<td>35.8</td>
<td>51.2</td>
</tr>
<tr>
<td>41-50 Years</td>
<td>155</td>
<td>35.2</td>
<td>86.4</td>
</tr>
<tr>
<td>51 and Over</td>
<td>60</td>
<td>13.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

| Grand Total   | 441       | 100.0   | 100.0              |

---

**Summary of Descriptive Statistics**

Table 20 provides a summary of the variables knowledge, attitude, PALS scores, including a total score and each of the seven factors, and sensitivity and inclusion. The table describes the number of respondents (n) for each of the variables, the scale used, the number of items in each of the scale (k), the mean score (x), the standard deviation (sd), the range, and the norm mean (norm x), if one has been identified for the scale. Tables 21 to 30 describe each of these variables in more detail.
Table 20

Summary Table of Descriptive Statistics for the Characteristics of Knowledge, Attitude, Sensitivity, Inclusion and PALS

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Knowledge</th>
<th>Attitude</th>
<th>PALS</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Sensitivity</th>
<th>Inclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>431</td>
<td>422</td>
<td>432</td>
<td>432</td>
<td>432</td>
<td>432</td>
<td>432</td>
<td>432</td>
<td>432</td>
<td>432</td>
<td>430</td>
<td>429</td>
</tr>
<tr>
<td>( \bar{x} )</td>
<td>4.8</td>
<td>3.5</td>
<td>133.5</td>
<td>36.3</td>
<td>26.4</td>
<td>20.0</td>
<td>12.2</td>
<td>14.3</td>
<td>13.1</td>
<td>11.1</td>
<td>7.7</td>
<td>7.4</td>
</tr>
<tr>
<td>sd</td>
<td>1.5</td>
<td>.32</td>
<td>14.4</td>
<td>7.0</td>
<td>4.4</td>
<td>4.5</td>
<td>3.2</td>
<td>2.8</td>
<td>3.1</td>
<td>3.3</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>norm ( \bar{x} )</td>
<td>NA</td>
<td>NA</td>
<td>146</td>
<td>38</td>
<td>31</td>
<td>21</td>
<td>14</td>
<td>16</td>
<td>13</td>
<td>13</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>range</td>
<td>1-9</td>
<td>1.8-4.5</td>
<td>90-176</td>
<td>11-60</td>
<td>11-40</td>
<td>0-30</td>
<td>0-20</td>
<td>0-20</td>
<td>0-19</td>
<td>1-25</td>
<td>3-11</td>
<td>3-11</td>
</tr>
<tr>
<td>scale</td>
<td>1-11</td>
<td>1-5</td>
<td>0-220</td>
<td>0-60</td>
<td>0-45</td>
<td>0-30</td>
<td>0-20</td>
<td>0-20</td>
<td>0-20</td>
<td>0-25</td>
<td>0-11</td>
<td>0-11</td>
</tr>
<tr>
<td>k</td>
<td>10</td>
<td>15</td>
<td>44</td>
<td>12</td>
<td>9</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>11</td>
<td>11</td>
</tr>
</tbody>
</table>

1 = Learner-centered activities  
2 = Personalizing instruction  
3 = Relating to student experiences  
4 = Assessing student needs  
5 = Climate building  
6 = Student participation in learning process  
7 = Flexibility for personal development
Knowledge

Table 21 displayed the summary data of the 431 OCES faculty and program staff responding on their level of knowledge related to principles and practices of adult education. The range of responses on the ten item true and false test was 0 to 9. The mean score for the test was 4.81 indicating that the average score was less than 50 percent correct. The standard deviation was 1.53. Those individuals who did not score any correct responses composed 1.2 percent (5) of the total responses, this was followed by .5 percent (2) with one correct response, 3.7 percent (16) with 2 correct responses, 12.1 percent (52) with three correct responses, and 24.4 percent (105) who scored four correct responses. The largest percentage, 27.6 percent (119) of the individuals received five correct responses. Six correct responses were received by 17.4 percent (75) of the individuals, and those with seven correct responses composed 10.5 percent (45) of the total. The remaining 2.6 percent was composed of individuals who scored eight (8) and nine (3) correct responses.
Table 21

Frequency Distribution for Knowledge Levels of OCES Faculty and Program Staff Related to Adult Education Principles and Practices

<table>
<thead>
<tr>
<th>Number of Correct Responses</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>.5</td>
<td>1.7</td>
</tr>
<tr>
<td>2</td>
<td>16</td>
<td>3.7</td>
<td>5.4</td>
</tr>
<tr>
<td>3</td>
<td>52</td>
<td>12.1</td>
<td>17.5</td>
</tr>
<tr>
<td>4</td>
<td>105</td>
<td>24.4</td>
<td>41.9</td>
</tr>
<tr>
<td>5</td>
<td>119</td>
<td>27.6</td>
<td>69.5</td>
</tr>
<tr>
<td>6</td>
<td>75</td>
<td>17.4</td>
<td>86.9</td>
</tr>
<tr>
<td>7</td>
<td>45</td>
<td>10.5</td>
<td>97.4</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>1.9</td>
<td>99.3</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Total
431 100.0 100.0

mean  = 4.81
median = 5.0
mode  = 5.0
standard deviation = 1.53
range  = 9.0 (1 - 9)
k      = 10

Perceived Attitude

Table 22 displayed the data for "perceived attitude related to role as an adult educator." Mean scores were calculated based on a one to five Likert type scale with 1 = Strongly Disagree and 5 = Strongly Agree. A score of 3 would be average or neutral.

Findings in Table 22 show that almost 70 percent of the respondents had a slightly
positive attitude toward their role as an adult educator. Forty-one percent (173) of the 422 individuals scored in the range of 3.2 - 3.52, followed by 28.4 percent (120) who scored 3.53 -3.7. Individuals exhibiting a score of 3.8 or higher comprised 19.7 percent (83) of the respondents while those individuals with a score of 3.2 or lower consisted of 10.9 percent (46) of the total respondents. The mean score of all respondents was slightly positive with a score of 3.51. The standard deviation was .32

Table 22

<table>
<thead>
<tr>
<th>*Mean Attitude Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3.2</td>
<td>46</td>
<td>10.9</td>
<td>10.9</td>
</tr>
<tr>
<td>3.2 - 3.52</td>
<td>173</td>
<td>41.0</td>
<td>51.9</td>
</tr>
<tr>
<td>3.53 - 3.7</td>
<td>120</td>
<td>28.4</td>
<td>80.3</td>
</tr>
<tr>
<td>3.8 or higher</td>
<td>83</td>
<td>19.7</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>422</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

* Means based on a 1 to 5 Likert type scale with 1 = Strongly Disagree and 5 = Strongly Agree.

Mean  = 3.51
Median =3.46
Mode  = 3.4
Standard Deviation = .32
Range  = 2.73 (1.8 - 4.53)
k* = 15
Perceived Teaching Style: PALS

The Principles of Adult Learning Scale (PALS) is a summated Likert type scale with values from 0 to 5. The scale consists of 44 items that when summed range from 0 - 220. The norm for the scale is 146. Table 24 describes the frequency distribution of OCES Faculty and Program Staff on the total PALS score. Additionally PALS can be divided into seven factors that identify specific elements that make up teaching style. Each of these seven factors is also reported with a score. Tables 25 to 31 describe OCES Faculty and Program Staff scores on each of the seven factors that comprise the Principles of Adult Learning Scale. Categories used for describing PALS and each of the seven factors were determined based on the number of standard deviations from the norm mean of the instrument. (See Table 23).

Table 23

<table>
<thead>
<tr>
<th>PALS</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>146</td>
<td>20.0</td>
</tr>
<tr>
<td>1</td>
<td>38</td>
<td>8.3</td>
</tr>
<tr>
<td>2</td>
<td>31</td>
<td>6.8</td>
</tr>
<tr>
<td>3</td>
<td>21</td>
<td>4.9</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>3.6</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>3.0</td>
</tr>
<tr>
<td>6</td>
<td>13</td>
<td>3.5</td>
</tr>
<tr>
<td>7</td>
<td>13</td>
<td>3.9</td>
</tr>
</tbody>
</table>
As a group, OCES faculty and program staff scored slightly lower than the average on the Principles of Adult Learning Scale. The mean score achieved on this scale by OCES Faculty and Program Staff was 133.4, and the standard deviation was 14.42. A total of 49.3 percent (213) of the respondents scored in the range of 126-145 or one standard deviation below the norm mean. The next largest group consisted of 26.9 percent (116) who scored two standard deviations below the norm mean with a range of 106-125. Three percent (13) of the respondents scored 105 or below. The remaining 20.8 percent (90) scored 146 or higher. A total of 68.5 percent (296) of all respondents score within one standard deviation of the norm mean score. Only three percent (13) scored three or more standard deviations from the norm mean. The range of scores of individuals completing the Principles of Adult Learning Scale was 86. The lowest score received was a 90, the highest score was 176 (See Table 24).

Factor one of the PALS instrument is made of twelve items that relate to Learner Centered Activities. This factor relates to evaluation by formal methods and a comparison of individuals to outside standards. Respondents with lower scores on this factor and supporting a more teacher-centered approach tend to prefer formal rather than informal testing and evaluation methods, exercise stronger control in the classroom by assuming all responsibility for determining the educational objectives and exerting disciplinary action. Teacher-centered individuals are more likely to prescribe to the idea that most adults have a similar style of learning and tend to practice only one basic teaching method. The frequency distribution for scores on factor one of PALS is shown in Table 25. The greatest percentage of OCES faculty and program staff scored slightly lower than the norm of 38, with 50.5 percent (218) scoring in the range of 30-38, one standard deviation
below the norm mean. The next largest group of 25.9 percent (112) scored in the range of 39-46, one standard deviation above the norm mean. A total of 75.9 percent (330) of the respondents scored within one standard deviation of the norm mean. A total of 22.2 percent (96) scored within two standard deviations of the norm mean with the majority, 25.9 percent (112) scoring higher than the norm mean. The remaining 1.4 percent (6) score three or more standard deviations higher than the norm mean. The high and low scores of respondents on this factor were 11 and 60 respectively.

Table 24

**Frequency Distribution of OCES Faculty and Program Staff of Perceived Teaching Style as Measured by Total Score on the Principles of Adult Learning Scale (PALS)**

<table>
<thead>
<tr>
<th>Total Score on PALS</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than 105</td>
<td>13</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>106 - 125</td>
<td>116</td>
<td>26.9</td>
<td>29.9</td>
</tr>
<tr>
<td>126 - 145</td>
<td>213</td>
<td>49.3</td>
<td>79.2</td>
</tr>
<tr>
<td>146 - 165</td>
<td>83</td>
<td>19.2</td>
<td>98.4</td>
</tr>
<tr>
<td>Greater than 166</td>
<td>7</td>
<td>1.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>432</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Scale = 0 - 220
Mean = 133.46
Median = 133
Mode = 133
Standard Deviation = 14.42
Range = 86 (90 - 176)
Norm X = 146
k = 44
Table 25

**Frequency Distribution of OCES Faculty and Program Staff on Perceived Teaching Style as Measured by Factor 1 of the Principles of Adult Learning Scale (PALS) - Learner Centered Activities**

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 21.5</td>
<td>6</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>21.5 - 30</td>
<td>65</td>
<td>15.0</td>
<td>16.4</td>
</tr>
<tr>
<td>30.5 - 38</td>
<td>218</td>
<td>50.5</td>
<td>66.9</td>
</tr>
<tr>
<td>38.5 - 46</td>
<td>112</td>
<td>25.9</td>
<td>92.8</td>
</tr>
<tr>
<td>Greater than 47</td>
<td>31</td>
<td>7.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Total** 432 100.0 100.0

Mean = 36.31
Median = 35.5
Mode = 35.00
Standard deviation = 6.96
Range = 49 (11-60)
k = 12
Norm x = 38

Factor 2 of the PALS instrument is Personalizing Instruction and is described in Table 26. Nine items compose the Personalizing Instruction factor. Personalizing Instruction involves utilizing a variety of techniques to meet the unique needs of each individual student, including development of objectives based on the students individual abilities, and the incorporation of a wide variety of teaching methods and materials. The
highest score achieved by respondents on this factor was 40, the lowest was 11. The majority (59.5 percent (257)) of OCES Faculty and Program Staff scored one standard deviation lower than the average score of 31 on this factor. Respondents scoring in the 18 - 24.5 range comprised 27.8 percent (20) of the total. Twelve respondents comprising 2.8 percent fell within 3 standard deviations below the norm mean. Respondents, overall scored lower than the norm mean on factor 2.

Table 26

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 18</td>
<td>12</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>18 - 24.5</td>
<td>120</td>
<td>27.8</td>
<td>30.6</td>
</tr>
<tr>
<td>25 - 31</td>
<td>257</td>
<td>59.5</td>
<td>90.1</td>
</tr>
<tr>
<td>31.5 - 38</td>
<td>40</td>
<td>9.3</td>
<td>99.4</td>
</tr>
<tr>
<td>Greater than 39</td>
<td>3</td>
<td>.6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Total 432 100.0 100.0

Mean = 26.27
Median = 26.0
Mode = 25.0
Standard deviation = 4.36
Range = 29 (11-40)
k = 9
Norm x = 31
Factor 3 of PALS, which is a measurement of a teachers support to take into account the participants prior experiences is called Relating to Experience. Respondents scoring high on this factor plan learning experiences and activities that take into account the individuals prior experiences, and encourage through questioning and support, ways to relate those prior experiences to their new learning experiences. The six items that make up this factor have a norm score of 21. The highest score in this factor was 30, the lowest was 0. The median score of OCES Faculty and Program Staff on this factor was 20.25, slightly below the average. A total of 62.3 percent (269) of the respondents scored below the norm mean score of 21. 51.9 percent (224) fell within one standard deviation below. One hundred forty four (144) respondents fell in the category of 21.5 - 26. Only 4.4 percent (19) achieved a score of 27 or higher. In factor 3 - Relating to Experience, 85.2 percent (368) of all respondents fell within one standard deviation of the norm mean (See Table 27).

Factor 4 of PALS is made up of four items related to Assessing Student Needs. As the name implies, this factor centers on the instructors behaviors toward finding out specifically what it is the student needs or wants to learn. Interaction with the participant is a key determinant in assessing existing gaps. The norm score for this factor is 14.

Table 28 illustrates the frequency distribution of OCES Faculty and Program Staff scores on items measuring factor 4 of PALS. The scores of respondents on this factor ranges from a low of 0 to a high of 20. OCES mean scores on factor 4 was 12, lower than the norm. Of the 432 respondents, 78.7 percent (340) of OCES Faculty and Program Staff scored the mean score or lower than the norm for this factor. Of the remaining 21.3 percent (92), 17.8 percent (77) scored one standard deviation higher than the norm mean, and 3.5 percent (15) had a score of 18 or greater (See Table 28).
Table 27

Frequency Distribution of OCES Faculty and Program Staff on Perceived Teaching Style as Measured by Factor 3 of PALS - Relating to Experience

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 11</td>
<td>13</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>12 - 15.5</td>
<td>32</td>
<td>7.4</td>
<td>10.4</td>
</tr>
<tr>
<td>16 - 21</td>
<td>224</td>
<td>51.9</td>
<td>62.3</td>
</tr>
<tr>
<td>21.5 - 26</td>
<td>144</td>
<td>33.3</td>
<td>95.6</td>
</tr>
<tr>
<td>Greater Than 27</td>
<td>19</td>
<td>4.4</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Total
432 100.0 100.0

Mean = 19.99
Median = 20.25
Mode = 21.0
Standard deviation = 4.5
Range = 30.0 (0-30)
k = 6
Norm x = 21
Table 28  
Frequency Distribution of OCES Faculty and Program Staff on Perceived Teaching Style as Measured by Factor 4 of PALS - Assessing Needs

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 7</td>
<td>17</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>7 - 10</td>
<td>87</td>
<td>20.1</td>
<td>24.1</td>
</tr>
<tr>
<td>11 - 14</td>
<td>236</td>
<td>54.6</td>
<td>78.7</td>
</tr>
<tr>
<td>15 - 17</td>
<td>77</td>
<td>17.8</td>
<td>96.5</td>
</tr>
<tr>
<td>Greater than 18</td>
<td>15</td>
<td>3.5</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>432</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mean = 12.24  
Median = 12.0  
Mode = 13.0  
Standard deviation = 3.17  
Range = 20.0 (0-20)  
k = 4  
Norm x = 14

Four items measure factor 5 of PALS - Climate Building. Eliminating barriers by creating an environment that is friendly, and encourages interaction among participants and risk taking are traits of a learner-centered instructor. The range of scores of respondents on factor 5 was a low of 0 and a high of 20. Table 29 describes the frequency
distribution of OCES Faculty and Program Staff scores on the items that measure climate building. A total of 81.7 percent (353) of the respondents scored the norm mean or lower than the norm of 16 for this factor. The remaining 18.3 percent (79) scored 16 or greater on factor 5 of PALS.

Table 29

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 9</td>
<td>11</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>10 - 12.5</td>
<td>67</td>
<td>15.5</td>
<td>18.0</td>
</tr>
<tr>
<td>13 - 16</td>
<td>275</td>
<td>63.7</td>
<td>81.7</td>
</tr>
<tr>
<td>17 - 19</td>
<td>76</td>
<td>17.6</td>
<td>99.3</td>
</tr>
<tr>
<td>Greater than 20</td>
<td>3</td>
<td>.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

|               | 432       | 100.0   | 100.0              |

Mean = 14.33  
Median = 15.0  
Mode = 14.0  
Standard deviation = 2.81  
Range = 20.0 (0-20)  
k = 4  
Norm x = 16
Table 30 describes the frequency distribution of scores of OCES faculty and program staff on factor 6 of PALS. A high score by respondents on this factor indicates behaviors that specifically encourage and involve students in determining content and evaluation of the material presented. A relationship develops between the student and teacher that fosters collaborative decision making. The four items in Factor 6 relate to Participation in the Learning Process. The norm score for factor 6 of the PALS instrument is 13. A total of 47 percent (202) of the OCES respondents scored higher than the norm with a score of greater than 13.5, and another 15.1 percent (65) received the norm score of 13. Therefore, a total of 62.1 percent (267) received the average score or higher on factor 6. The remaining 37.9 percent (165) of the 432 respondents scored lower than 13. A total of 79.4 percent (343) of all respondents fell within one standard deviation of the norm mean. The highest score on this factor was a 19, the lowest was a 0.

Table 31 describes the frequency distribution of scores of OCES Faculty and Program Staff on factor 7 of PALS. Factor 7 contains five items related to Flexibility for Personal Development. A high score on Flexibility for Personal Development describes an instructor who is flexible to the students changing needs and adapts the environment and content to accommodate those needs. A high level of sensitivity is exhibited and issues related to values are addressed rather than avoided. The instructor views himself/herself in the role of a facilitator not as just an information provider. A score of 13 was the norm for factor 7 of PALS. A majority (83.1 percent) of OCES respondents scored lower than the norm on this factor. The range of scores recorded show a low of 1 and a high of 25. A total of 69.9 percent (302) had scores in the range of one standard deviation of the norm mean. The remaining 16.9 percent (73) of the respondents received scores of 13.5 or
higher. Of that group, 13.2 percent (57) fell in the range of 13.5 - 17 (one standard deviation above the norm mean.

Table 30

**Frequency Distribution of OCES Faculty and Program Staff on Perceived Teaching Style as Measured by Factor 6 of PALS - Participation in the Learning Process**

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 6</td>
<td>8</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>6 - 9</td>
<td>29</td>
<td>6.7</td>
<td>8.6</td>
</tr>
<tr>
<td>9.5 - 13</td>
<td>192</td>
<td>44.4</td>
<td>53.0</td>
</tr>
<tr>
<td>13.5 - 16</td>
<td>151</td>
<td>35.0</td>
<td>88.0</td>
</tr>
<tr>
<td>Greater than 16</td>
<td>52</td>
<td>12.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>432</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mean = 13.13  
Median = 13.0  
Mode = 13.0  
Standard deviation = 3.11  
Range = 19 (0-19)  
k = 4  
Norm x = 13
### Table 31

**Frequency Distribution of OCES Faculty and Program Staff on Perceived Teaching Style as Measured by Factor 7 of PALS - Personal Development**

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>10</td>
<td>2.3</td>
<td>2.3</td>
</tr>
<tr>
<td>5.5 - 9.0</td>
<td>104</td>
<td>24.1</td>
<td>26.4</td>
</tr>
<tr>
<td>9.5 - 13.0</td>
<td>245</td>
<td>56.7</td>
<td>83.1</td>
</tr>
<tr>
<td>13.5 - 17</td>
<td>57</td>
<td>13.2</td>
<td>96.3</td>
</tr>
<tr>
<td>17.5 - 21</td>
<td>10</td>
<td>2.3</td>
<td>98.6</td>
</tr>
<tr>
<td>Greater than 22</td>
<td>6</td>
<td>1.4</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>432</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

- **Mean** = 11.08
- **Median** = 11.0
- **Mode** = 10.0
- **Standard deviation** = 3.33
- **Range** = 24 (1-25)
- **k** = 5
- **Norm x** = 13
Sensitivity and Inclusion

The Sensitivity and Inclusion variables were measured using the Van Tilburg/Heimlich measure. The Van Tilburg/Heimlich measure is a Thurstone equal-appearing interval scale. Each scale (sensitivity, inclusion) required eleven items, thus the scale was one to eleven. Each of the items is weighted. An individual's score results in a mean between one and eleven. Tables 32 and 33, describe OCES Faculty and Program Staff's perceived behaviors related to sensitivity and inclusion as measured by the mean scores on the Van Tilburg/Heimlich measure.

Table 32 described mean scores related to the variable sensitivity. A total of 47.0 percent (202) of the 430 respondents score averaged between 6.0 and 7.83 followed by 43.7 percent (188) whose mean score was greater than 8.0. Of the remaining respondents, 9.3 percent (40) scored less than 6.0. The median score for all respondents on the variable sensitivity was 7.67 with a standard deviation of 1.2.

Mean scores achieved by OCES Faculty and Program Staff related to the variable inclusion were overall slightly lower than those of sensitivity. The median score for inclusion was 7.4 with a standard deviation of 1.0. The largest group of respondents, 68.8 percent (278), had a mean score between 6.0 and 7.9, followed by 31.2 percent (134) who had scored greater than 8.0. The remaining four percent (17) of the respondents scored less than 6.0 (See Table 33).

The high and low scores recorded on both sensitivity and inclusion were three and eleven, respectively.
Table 32

Frequency Distribution of OCES Faculty and Program Staff Behaviors Related to Sensitivity as Measured by Mean Scores on the Van Tilburg/Heimlich Measure

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 6.0</td>
<td>40</td>
<td>9.3</td>
<td>9.3</td>
</tr>
<tr>
<td>6.1 - 7.83</td>
<td>202</td>
<td>47.0</td>
<td>56.3</td>
</tr>
<tr>
<td>Greater than 8.0</td>
<td>188</td>
<td>43.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>430</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Scale = 1 - 11  
Mean = 7.69  
Median = 7.67  
Mode = 9.0  
Standard deviation = 1.20  
Range = 8.0 (3-11)  
k = 11
Table 33

Frequency Distribution of OCES Faculty and Program Staff Behaviors Related to Inclusion as Measured by Mean Scores on the Van Tilburg/Heimlich Measure

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 6.0</td>
<td>17</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>6.0 - 7.9</td>
<td>278</td>
<td>68.8</td>
<td>50.4</td>
</tr>
<tr>
<td>Greater than 8.0</td>
<td>134</td>
<td>31.2</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>429</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Scale = 1 - 11  
Mean = 7.45  
Median = 7.4  
Mode = 7.0  
Standard deviation = 1.00  
Range = 8 (3-11)  
k = 11

**Objective 2:** To describe the relationship between selected antecedent characteristics.

Tables 34 through 38 illustrate the relationships found between the characteristics of knowledge, attitude, mean score on sensitivity and mean score on inclusion and all other antecedent characteristics. To accomplish this objective several of the characteristics including knowledge, attitude, sensitivity and inclusion were converted from interval data
to nominal data. Conversion of the data facilitated interpretation by eliminating excessive dummy coding. All relationships are described according to Davis's (1971) Measures of Association. Relationships among these characteristics were all found to be of negligible or low association. Negative correlations were found between knowledge and the characteristics of age, teaching experience outside of Extension; attitude and highest educational degree, and; sensitivity and number of years employed, age, and inclusion and age, and teaching experience outside Extension. The characteristics of gender, academic major and major program area of responsibility were measured at the nominal level and have no order, therefore, no mention of type of relationship was made for these characteristics.

Table 38 provides a summary of descriptive data for selected demographic variables and the characteristics of knowledge, attitude, sensitivity and inclusion. The information provides an additional means of describing the relationship between each of the characteristics by looking at each of the levels.
Table 34

Relationship Between Knowledge, Attitude, Sensitivity and Inclusion Scores and Major Program Area of Responsibility, Professional Position and Academic Major of OCES Faculty and Program Staff

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Professional Position</th>
<th>Academic Major</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>coefficient</td>
</tr>
<tr>
<td>Knowledge</td>
<td>(413)</td>
<td>.084</td>
</tr>
<tr>
<td>Attitude</td>
<td>(413)</td>
<td>.168</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>(416)</td>
<td>.177</td>
</tr>
<tr>
<td>Inclusion</td>
<td>(415)</td>
<td>.141</td>
</tr>
</tbody>
</table>

coefficients reported as Cramers V

Table 35

Relationship Between Knowledge, Attitude, Sensitivity and Inclusion Scores and Number of Years Employed, Highest Educational Degree and Age of OCES Faculty and Program Staff

<table>
<thead>
<tr>
<th>Number of Years Employed</th>
<th>Highest Educational Degree</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>coefficient</td>
</tr>
<tr>
<td>Knowledge*</td>
<td>(421)</td>
<td>.076</td>
</tr>
<tr>
<td>Attitude</td>
<td>(417)</td>
<td>.020</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>(424)</td>
<td>-.029</td>
</tr>
<tr>
<td>Inclusion</td>
<td>(423)</td>
<td>.052</td>
</tr>
</tbody>
</table>

coefficients reported as Kendalls Tau B
* knowledge coefficients reported as Kendalls Tau C
Table 36

**Relationship Between Knowledge, Attitude, Sensitivity and Inclusion Scores and Gender of OCES Faculty and Program Staff**

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>coefficient</th>
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</thead>
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<tr>
<td>Knowledge</td>
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<td>-.090</td>
</tr>
<tr>
<td>Attitude</td>
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<td>-.173</td>
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<td>-.318</td>
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<td>Inclusion</td>
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<td>-.114</td>
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</table>

Coefficients reported as point biserial

1 = male
2 = female

Table 37

**Relationship Between Knowledge, Attitude, Sensitivity, and Inclusion Scores and Number of Adult Education Classes Taken and Number of Years Teaching Outside of Extension of OCES Faculty and Program Staff**

<table>
<thead>
<tr>
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<th>Number of Adult Education Classes Taken</th>
<th>Teaching Experience Outside Extension</th>
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</thead>
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<td></td>
<td>n</td>
<td>coefficient</td>
</tr>
<tr>
<td>Knowledge</td>
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<td>.110</td>
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<tr>
<td>Attitude</td>
<td>335</td>
<td>.110</td>
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<tr>
<td>Sensitivity</td>
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<tr>
<td>Inclusion</td>
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<td>.057</td>
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</table>

* coefficients reported as Pearson r
### Table 38

**Summary Table of Knowledge, Attitude, Sensitivity and Inclusion Scores Based on Selected Characteristics**

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Knowledge</th>
<th></th>
<th></th>
<th>Attitude</th>
<th></th>
<th></th>
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</thead>
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<td>n</td>
<td>x</td>
<td>sd</td>
<td>n</td>
<td>x</td>
<td>sd</td>
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<td></td>
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<tr>
<td>Agriculture</td>
<td>126</td>
<td>4.7</td>
<td>1.4</td>
<td>123</td>
<td>3.5</td>
<td>.33</td>
</tr>
<tr>
<td>Home Economics</td>
<td>113</td>
<td>4.9</td>
<td>1.6</td>
<td>111</td>
<td>3.6</td>
<td>.31</td>
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<td>4-H</td>
<td>116</td>
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<td>1.6</td>
<td>115</td>
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<td>.28</td>
</tr>
<tr>
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<td>1.4</td>
<td>24</td>
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<td>.34</td>
</tr>
<tr>
<td>Other</td>
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<tr>
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<td><strong>Years Employed</strong></td>
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<td>.34</td>
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<td>.32</td>
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<td>HS/GED</td>
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<td>73</td>
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<td>222</td>
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Table 38 - Continued

Summary Table of Knowledge, Attitude, Sensitivity and Inclusion Scores Based on Selected Characteristics

<table>
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<tr>
<th>Demographic Variables</th>
<th>Sensitivity</th>
<th></th>
<th></th>
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<tr>
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<td>1.3</td>
<td>56</td>
<td>7.3</td>
<td>1.2</td>
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</tr>
<tr>
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<td>192</td>
<td>7.4</td>
<td>1.2</td>
<td>192</td>
<td>7.4</td>
<td>0.92</td>
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<tr>
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<td>225</td>
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<td>1.2</td>
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<td>1.0</td>
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<td>0.91</td>
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</tr>
<tr>
<td>Technical</td>
<td>165</td>
<td>7.7</td>
<td>1.3</td>
<td>164</td>
<td>7.4</td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>
**Objective 3:** To describe the relationship between selected antecedent characteristics and the dependent variable.

Data in Tables 39 through 42 describe the relationships between PALS and all other characteristics. All relationships were found to be negligible or low. Negative correlations were found to exist between Factor 1 - Learner-Centered Activities and Age, and Teaching Experience Outside Extension; Factor 2 - Personalizing Instruction and Highest Educational Degree; Factor 3 - Relating to Experience and Knowledge; Factor 4 - Assessing Student Needs and Knowledge; Factor 6 - Participation in the Learning Process and Knowledge; and Factor 7 - Flexibility for Personal Development and Age, and Number of Adult Education Classes. All other relationships were shown to be positive.

Table 42 provides a summary of descriptive data for selected demographic characteristics and the dependent variable - score on PALS. Provided in this table is evidence that minimal differences do exist among the levels of each of the characteristics described.
Table 39

Relationship Between Scores on Principles of Adult Learning Scale and Program Area, Professional Position and Academic Major of OCES Faculty and Program Staff

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Professional Position</th>
<th>Academic Major</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>coefficient</td>
</tr>
<tr>
<td>Total Pals</td>
<td>(417)</td>
<td>.121</td>
</tr>
<tr>
<td>Factor 1</td>
<td>(417)</td>
<td>.068</td>
</tr>
<tr>
<td>2</td>
<td>(417)</td>
<td>.157</td>
</tr>
<tr>
<td>3</td>
<td>(410)</td>
<td>.162</td>
</tr>
<tr>
<td>4</td>
<td>(410)</td>
<td>.096</td>
</tr>
<tr>
<td>5</td>
<td>(417)</td>
<td>.140</td>
</tr>
<tr>
<td>6</td>
<td>(417)</td>
<td>.127</td>
</tr>
<tr>
<td>7</td>
<td>(417)</td>
<td>.114</td>
</tr>
</tbody>
</table>

Coefficients reported as Craners V

1 = Learner-centered activities
2 = Personalizing instruction
3 = Relating to student experiences
4 = Assessing student needs
5 = Climate building
6 = Student participation in learning process
7 = Flexibility for personal development
Table 40

Relationship Between Scores on the Principles of Adult Learning Scale and Number of Years Employed, Highest Educational Degree and Age of OCES Faculty and Program Staff

<table>
<thead>
<tr>
<th></th>
<th>Number of Years Employed</th>
<th>Highest Educational Degree</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>coefficient</td>
<td>n</td>
</tr>
<tr>
<td>Total PALS</td>
<td>(425)</td>
<td>.096</td>
<td>(421)</td>
</tr>
<tr>
<td>Factor 1</td>
<td>(425)</td>
<td>.043</td>
<td>(421)</td>
</tr>
<tr>
<td>2</td>
<td>(425)</td>
<td>.087</td>
<td>(421)</td>
</tr>
<tr>
<td>3</td>
<td>(419)</td>
<td>.059</td>
<td>(415)</td>
</tr>
<tr>
<td>4</td>
<td>(419)</td>
<td>.095</td>
<td>(415)</td>
</tr>
<tr>
<td>5</td>
<td>(425)</td>
<td>.047</td>
<td>(421)</td>
</tr>
<tr>
<td>6</td>
<td>(425)</td>
<td>.207</td>
<td>(421)</td>
</tr>
<tr>
<td>7</td>
<td>(425)</td>
<td>.015</td>
<td>(421)</td>
</tr>
</tbody>
</table>

coefficients reported as Kendalls Tau B

1 = Learner-centered activities
2 = Personalizing instruction
3 = Relating to student experiences
4 = Assessing student needs
5 = Climate building
6 = Student participation in the learning process
7 = Flexibility for personal development
Table 41

Relationship Between Scores on Principles of Adult Learning Scale and Gender of OCES Faculty and Program Staff

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>coefficient</th>
</tr>
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<tbody>
<tr>
<td>Total PALS</td>
<td>337</td>
<td>-.098</td>
</tr>
<tr>
<td>Factor 1</td>
<td>337</td>
<td>-.063</td>
</tr>
<tr>
<td>2</td>
<td>337</td>
<td>-.211</td>
</tr>
<tr>
<td>3</td>
<td>337</td>
<td>-.070</td>
</tr>
<tr>
<td>4</td>
<td>337</td>
<td>.121</td>
</tr>
<tr>
<td>5</td>
<td>337</td>
<td>.010</td>
</tr>
<tr>
<td>6</td>
<td>337</td>
<td>.002</td>
</tr>
<tr>
<td>7</td>
<td>337</td>
<td>-.042</td>
</tr>
</tbody>
</table>

Coefficients reported as point biserial

1 = male
2 = female

Factors:
1 = Learner-centered activities
2 = Personalizing instruction
3 = Relating to student experiences
4 = Assessing student needs
5 = Climate building
6 = Student participation in learning process
7 = Flexibility for personal development
Table 42

Relationship Between Scores on Principles of Adult Learning Scale and Knowledge, Attitude, Sensitivity, Inclusion, Number of Adult Education Classes Taken and Number of Years Teaching Outside of Extension of OCES Faculty and Program Staff (n = 335)

<table>
<thead>
<tr>
<th></th>
<th>Knowledge</th>
<th>Attitude</th>
<th>Sensitivity</th>
<th>Inclusion</th>
<th>Number of Adult Education Classes Taken</th>
<th>Outside Teaching Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PALS</td>
<td>0.073</td>
<td>0.205</td>
<td>0.263</td>
<td>0.220</td>
<td>0.170</td>
<td>0.061</td>
</tr>
<tr>
<td>Factor 1</td>
<td>0.111</td>
<td>-0.013</td>
<td>0.040</td>
<td>0.059</td>
<td>-0.122</td>
<td>-0.048</td>
</tr>
<tr>
<td>2</td>
<td>0.015</td>
<td>0.197</td>
<td>0.201</td>
<td>0.201</td>
<td>0.114</td>
<td>0.020</td>
</tr>
<tr>
<td>3</td>
<td>-0.023</td>
<td>0.166</td>
<td>0.169</td>
<td>0.083</td>
<td>0.169</td>
<td>0.074</td>
</tr>
<tr>
<td>4</td>
<td>-0.114</td>
<td>0.080</td>
<td>0.087</td>
<td>0.086</td>
<td>0.233</td>
<td>0.080</td>
</tr>
<tr>
<td>5</td>
<td>0.047</td>
<td>0.138</td>
<td>0.123</td>
<td>0.048</td>
<td>0.155</td>
<td>0.103</td>
</tr>
<tr>
<td>6</td>
<td>-0.033</td>
<td>0.225</td>
<td>0.215</td>
<td>0.119</td>
<td>0.280</td>
<td>0.060</td>
</tr>
<tr>
<td>7</td>
<td>0.193</td>
<td>0.007</td>
<td>0.161</td>
<td>0.187</td>
<td>-0.026</td>
<td>0.009</td>
</tr>
</tbody>
</table>

coefficients reported as Pearson r

1 = Learner-centered activities
2 = Personalizing instruction
3 = Relating to student experiences
4 = Assessing student needs
5 = Climate Building
6 = Student participation in the learning process
7 = Flexibility for personal development
### Summary Table of Principles of Adult Learning Scale Based on Selected Characteristics

<table>
<thead>
<tr>
<th>Ascendant Characteristics</th>
<th>1</th>
<th>2</th>
<th>3</th>
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</thead>
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<tr>
<td><strong>Program Area</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>126 132 11.4</td>
<td>126 36.9 6.2</td>
<td>126 74.9 3.4</td>
</tr>
<tr>
<td>Home Economics</td>
<td>113 136.2 15.4</td>
<td>113 36.3 7.5</td>
<td>113 27.6 4.6</td>
</tr>
<tr>
<td>4-H</td>
<td>116 133.3 14.2</td>
<td>116 35.9 6.4</td>
<td>116 36.8 4.1</td>
</tr>
<tr>
<td>CHRD</td>
<td>22 133.5 15.8</td>
<td>22 36.0 7.2</td>
<td>22 25.8 4.7</td>
</tr>
<tr>
<td>Other</td>
<td>40 129.1 17.6</td>
<td>40 35.2 8.8</td>
<td>40 36.2 5.4</td>
</tr>
<tr>
<td><strong>Professional Position</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Para-Professionals</td>
<td>101 129.3 15.0</td>
<td>101 35.9 9.1</td>
<td>101 26.5 5.1</td>
</tr>
<tr>
<td>County Professionals</td>
<td>208 134.9 12.5</td>
<td>208 36.2 5.5</td>
<td>208 26.6 3.6</td>
</tr>
<tr>
<td>District/State Specialists</td>
<td>76 134.5 14.2</td>
<td>76 37.0 5.3</td>
<td>76 25.4 4.3</td>
</tr>
<tr>
<td>District/State Administrators</td>
<td>17 140.3 13.1</td>
<td>17 35.9 5.1</td>
<td>17 27.6 4.3</td>
</tr>
<tr>
<td><strong>Years Employed</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>≤ 3</td>
<td>131 131.7 14.5</td>
<td>131 37.5 8.2</td>
<td>131 23.9 4.9</td>
</tr>
<tr>
<td>4 - 7</td>
<td>55 129.4 15.5</td>
<td>55 35.8 7.8</td>
<td>55 25.5 4.2</td>
</tr>
<tr>
<td>8 - 15</td>
<td>121 136.2 13.3</td>
<td>121 36.2 5.9</td>
<td>121 26.9 3.9</td>
</tr>
<tr>
<td>&gt; 15</td>
<td>118 134.6 13.7</td>
<td>118 35.2 5.5</td>
<td>118 28.8 4.1</td>
</tr>
<tr>
<td><strong>Higher Degree</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS/GED</td>
<td>59 139.4 16.8</td>
<td>59 33.7 8.6</td>
<td>59 27.3 4.9</td>
</tr>
<tr>
<td>BA/BS</td>
<td>74 120.6 14.4</td>
<td>74 37.9 9.7</td>
<td>74 35.9 4.7</td>
</tr>
<tr>
<td>MA/MS</td>
<td>229 135.7 13.0</td>
<td>229 36.3 5.7</td>
<td>229 26.5 3.9</td>
</tr>
<tr>
<td>PhD/EdD</td>
<td>59 134.4 14.4</td>
<td>59 36.6 5.2</td>
<td>59 35.5 4.1</td>
</tr>
<tr>
<td><strong>Age Categories</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 30</td>
<td>65 127.9 11.7</td>
<td>65 36.9 8.2</td>
<td>65 25.1 4.0</td>
</tr>
<tr>
<td>31 - 40</td>
<td>153 132.7 14.4</td>
<td>153 37.1 6.4</td>
<td>153 35.7 4.3</td>
</tr>
<tr>
<td>41 - 50</td>
<td>146 134.1 14.3</td>
<td>146 35.9 6.6</td>
<td>146 27.5 4.2</td>
</tr>
<tr>
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<td>96 34.1 7.4</td>
<td>96 26.2 4.5</td>
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<tr>
<td><strong>Gender</strong></td>
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<td></td>
</tr>
<tr>
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<td>192 25.4 3.9</td>
</tr>
<tr>
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<td>226 36.4 7.4</td>
<td>226 27.1 4.4</td>
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<tr>
<td><strong>Academic Major-Highest Degree</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>200 135.6 13.5</td>
<td>200 36.9 6.8</td>
<td>200 26.7 4.1</td>
</tr>
<tr>
<td>Technical</td>
<td>165 131.9 13.5</td>
<td>165 36.4 6.5</td>
<td>165 25.8 4.2</td>
</tr>
</tbody>
</table>
Summary Table of Principles of Adult Learning Scale Based on Selected Characteristics

<table>
<thead>
<tr>
<th>Attitudes/Characteristics</th>
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<th>5</th>
<th>6</th>
<th>7</th>
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<td>Program Area</td>
<td>n</td>
<td>x</td>
<td>sd</td>
<td>n</td>
</tr>
<tr>
<td>Agriculture</td>
<td>126</td>
<td>12.6</td>
<td>2.7</td>
<td>126</td>
</tr>
<tr>
<td>Home Economics</td>
<td>113</td>
<td>12.1</td>
<td>3.5</td>
<td>113</td>
</tr>
<tr>
<td>4-H</td>
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<td>12.1</td>
<td>3.3</td>
<td>116</td>
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<td>CNRD</td>
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<td>2.9</td>
<td>22</td>
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<td>3.6</td>
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<td>Professional</td>
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<td>x</td>
<td>sd</td>
<td>n</td>
</tr>
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<td>3.9</td>
<td>101</td>
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<tr>
<td>Para-Professionals</td>
<td>208</td>
<td>12.5</td>
<td>2.5</td>
<td>208</td>
</tr>
<tr>
<td>County Professionals</td>
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<td>12.5</td>
<td>2.5</td>
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<td>76</td>
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<td>Year Employed</td>
<td>n</td>
<td>x</td>
<td>sd</td>
<td>n</td>
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<tr>
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<td>13.1</td>
<td>2.7</td>
<td>118</td>
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<tr>
<td>Highest Degree</td>
<td>n</td>
<td>x</td>
<td>sd</td>
<td>n</td>
</tr>
<tr>
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<td>12.8</td>
<td>3.8</td>
<td>59</td>
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<td>3.3</td>
<td>74</td>
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<td>12.5</td>
<td>2.6</td>
<td>229</td>
</tr>
<tr>
<td>PhD/EdD</td>
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<td>12.5</td>
<td>2.9</td>
<td>59</td>
</tr>
<tr>
<td>Age Categories</td>
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<td>x</td>
<td>sd</td>
<td>n</td>
</tr>
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<td>≤ 30</td>
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<td>10.9</td>
<td>3.8</td>
<td>65</td>
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<td>31 - 40</td>
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<td>41 - 50</td>
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<td>2.8</td>
<td>146</td>
</tr>
<tr>
<td>&gt; 50</td>
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<td>13.1</td>
<td>2.8</td>
<td>56</td>
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<tr>
<td>Gender</td>
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<td>x</td>
<td>sd</td>
<td>n</td>
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<tr>
<td>Academic Major/</td>
<td>n</td>
<td>x</td>
<td>sd</td>
<td>n</td>
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<td>Education</td>
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<td>Technical</td>
<td>165</td>
<td>12.0</td>
<td>3.0</td>
<td>165</td>
</tr>
</tbody>
</table>
Objective 4: To determine the best predictor(s) of the dependent variable, "teaching style preference as measured by PALS."

Multiple regression was performed to determine the proportion of variance in the dependent variable "extent to which behaviors associated with teaching style are learner-centered" (as measured by total score on PALS), that was explained by the linear combination of selected characteristics. A stepwise linear regression was performed to determine the best predictor(s) of the extent to which behaviors associated with teaching style are learner-centered as measured by PALS.

Relationships between all characteristics and the total score on PALS were examined. Associations ranged from negligible to moderate, according to Davis (1971). Correlation coefficients with a low association of .14 or higher or a moderate association were entered into the regression model. These characteristics include: number of adult education classes taken, academic major, attitude, score on sensitivity and score on inclusion. Based on a review of the literature, three additional characteristics: knowledge, gender and years of teaching experience outside of Extension, were also entered into the regression model. These additional characteristics did not remain in the model and were found to have contributed no significant increment in $R^2$. Table 44 illustrates the intercorrelations found between the eight characteristics entered into the model.

Table 45 describes the four characteristics remaining in the regression model. As indicated, the remaining characteristics, did not contribute a significant increment in the $R^2$. This table does illustrate however, that 15.5 percent of the variance in the total score on PALS could be explained by the linear relationship with the characteristics of
sensitivity, inclusion, total number of adult education classes taken and attitude toward
being an adult educator

The results of the regression analysis, indicate that the following equation provides
the best prediction of the total score on PALS: Total Score on PALS = sensitivity,
inclusion, number of adult education classes taken and attitude.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>X₁</th>
<th>X₂</th>
<th>X₃</th>
<th>X₄</th>
<th>X₅</th>
<th>X₆</th>
<th>Y₁</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude (X₁)</td>
<td>1.00</td>
<td>.039</td>
<td>.10</td>
<td>.082</td>
<td>.099</td>
<td>-.171</td>
<td>.096</td>
<td>.037</td>
<td>.205</td>
</tr>
<tr>
<td>Knowledge (X₂)</td>
<td>.10</td>
<td>1.00</td>
<td>.003</td>
<td>-.115</td>
<td>.042</td>
<td>.100</td>
<td>.132</td>
<td>.187</td>
<td>.073</td>
</tr>
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<td>Adult Education Classes (X₃)</td>
<td>-.115</td>
<td>.003</td>
<td>1.00</td>
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<td>.028</td>
<td>.087</td>
<td>.170</td>
<td>.272</td>
<td>.825</td>
</tr>
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<td>Teaching Experience (X₄)</td>
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<td>.100</td>
<td>.164</td>
<td>1.00</td>
<td>.046</td>
<td>.169</td>
<td>.910</td>
<td>.144</td>
<td>.961</td>
</tr>
<tr>
<td>Academic Major (X₅)</td>
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<td>.028</td>
<td>.087</td>
<td>.169</td>
<td>1.00</td>
<td>.007</td>
<td>.037</td>
<td>.083</td>
<td>.116</td>
</tr>
<tr>
<td>Gender (X₆)</td>
<td>.028</td>
<td>.170</td>
<td>.170</td>
<td>.910</td>
<td>.007</td>
<td>1.00</td>
<td>.325</td>
<td>-.028</td>
<td>-.098</td>
</tr>
<tr>
<td>Sensitivity (X₇)</td>
<td>.144</td>
<td>.272</td>
<td>.272</td>
<td>.144</td>
<td>.037</td>
<td>.100</td>
<td>1.00</td>
<td>.255</td>
<td>.266</td>
</tr>
<tr>
<td>Inclusion (X₈)</td>
<td>.961</td>
<td>4.28</td>
<td>4.28</td>
<td>.961</td>
<td>.083</td>
<td>.116</td>
<td>.56</td>
<td>.220</td>
<td>.750</td>
</tr>
<tr>
<td>Total PALS (Y₁)</td>
<td>.083</td>
<td>.116</td>
<td>.116</td>
<td>.083</td>
<td>.116</td>
<td>.56</td>
<td>.56</td>
<td>.100</td>
<td>10.0</td>
</tr>
</tbody>
</table>
Table 45

Regression of Total PALS Score on Sensitivity, Attitude, Inclusion and Total Adult Education Classes Taken, (n = 335) (stepwise entry)

<table>
<thead>
<tr>
<th>Variables</th>
<th>$R^2$</th>
<th>$R^2_{change}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>.089</td>
<td>.089</td>
</tr>
<tr>
<td>Inclusion</td>
<td>.125</td>
<td>.036</td>
</tr>
<tr>
<td>Total Adult Education Classes</td>
<td>.143</td>
<td>.019</td>
</tr>
<tr>
<td>Attitude Score</td>
<td>.155</td>
<td>.012</td>
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CHAPTER V

SUMMARY, RECOMMENDATIONS, AND IMPLICATIONS

This chapter was organized in the following manner: Introduction, Summary of Procedures, Summary of Implications and Findings, General Summary of Conclusions of the Study, Recommendations and Need for Further Study.

Introduction

The study was descriptive-correlational in nature, with the primary focus being to describe the factors related to the perceived behaviors of teaching adults of the Ohio Cooperative Extension Service faculty and program staff. Also examined were employee's attitudes toward their role as an adult educator and the level of knowledge possessed of basic adult education principles and practices as described in the literature.

The dependent variable utilized in this study was the scores obtained on the Principles of Adult Learning Scale (PALS), as measured by a total or summated score and the scores on each of the seven factors or elements that comprise the total score. The antecedent characteristics included in this study were: a) attitude toward perceived role as an adult educator, b) knowledge of basic adult education principles and practices, c) sensitivity of the instructor to the needs/concerns of the clientele/students, d) inclusion of students in the learning process by the instructor, e) major program area of responsibility, f) current professional position within Ohio Cooperative Extension Service,
g) number of years employed by Cooperative Extension Service, h) highest educational degree obtained, i) academic major in highest degree area, j) total number of adult education classes taken, k) professional teaching experience outside of the Cooperative Extension Service, l) gender, and m) age.

Four specific research objectives guided this study. They were:

1. To describe the faculty and program staff of the Ohio Cooperative Extension Service on the following selected characteristics:

   A. Attitude toward perceived role as an adult educator

   B. Knowledge of basic adult education principles and concepts

   C. The extent to which behaviors associated with teaching adults exhibit sensitivity as measured by the Van Tilburg/Heimlich Sensitivity-Inclusion Scale

   D. The extent to which behaviors associated with teaching adults exhibit inclusion as measured by the Van Tilburg/Heimlich Sensitivity-Inclusion Scale

   E. The extent to which behaviors associated with teaching adults are teacher-centered or learner-centered as measured by mean scores on the Principles of Adult Learning Scale

   F. The extent to which specific elements that determine perceived teaching style contribute as measured by mean scores on each of the seven factors that comprise the Principles of Adult Learning Scale (PALS):

      - Learner-Centered Activities
      - Personalizing Instruction
      - Relating to Experience
      - Assessing Student Needs
      - Climate Building
- Participation in the Learning Process
- Flexibility for Personal Development

G. Major Program Area of Responsibility
H. Current Program Position Within OCES
I. Length of Service with Extension
J. Highest Educational Degree Achieved
K. Academic Major in Highest Degree
L. Total Number of Formal Adult Education Classes Taken
M. Professional Teaching Experience Outside of Extension
N. Gender
O. Age

2. To describe the relationship between antecedent characteristics, specifically:

A. Perceived degree of Sensitivity, Inclusion, Knowledge and Attitude and the characteristics of:

1. Major Program Area of Responsibility
2. Current Program Position Within Extension
3. Length of Service Within Extension
4. Highest Educational Degree Achieved
5. Academic Major in Highest Degree
6. Total Number of Formal Adult Education Classes Taken
7. Professional Teaching Experience Outside of Extension
8. Gender
9. Age
B. Perceived degree of Sensitivity and Inclusion and Attitude

C. Perceived degree of Sensitivity and Inclusion and Knowledge

3. To describe the relationship between all antecedent characteristics and the dependent variable.

4. To determine the best predictor(s) of the dependent variable, "perceived style as measured by PALS."

Summary of Procedures

The section on Procedures included a summary of the following: research design, subject selection, instrumentation, data collection, and data analysis.

Research Design

The study was descriptive-correlational, allowing the researcher to describe the population on selected variables as well as determine the nature and strength of those relationships.

Subject Selection

The target population to which results were to be generalized included all Ohio Cooperative Extension Service Faculty and Program Staff employed as of January 1, 1990. A census was utilized to gather information from the target population. Included were all
State Administrators and Specialists, State Administrative Associates, District
Administrators and Specialists, County Agents, Extension Associates, Program Assistants,
and Expanded Food and Nutrition Educators. A complete list of names and addresses was
obtained from the Leader, Personnel of OCES. The total number of subjects utilized in
the study was 609.

Instrumentation

A mail questionnaire was used to collect data. The instrument developed by the
researcher contained five sections (Appendix A). Section I of the instrument consisted of
fifteen items designed to collect information pertaining to the attitude of OCES Faculty
and Program Staff toward their role as an adult educator. A five point Likert-type scale,
with one equal to strongly disagree and five equal to strongly agree was used.

Items in Section II pertained to the individual's level of knowledge and
understanding related to principles and practices of adult education as determined from
the current literature. Respondents were asked to agree or disagree by circling the
appropriate response for each of the ten items.

A modified version of the Principles of Adult Learning Scale (PALS) was used to
assess an individuals perceived teaching style in Section III. Modifications, made
collaboratively with the author and creator of PALS, Dr. Gary Conti, consisted primarily
of rewording statements so that they more accurately reflected the role of an Extension
educator rather than a teacher in a formal classroom setting. PALS is a 44 item six point
Likert-type scale that has been used extensively in adult education settings. The scale, with
a minimum of zero and maximum of six, was designed to collect information relating to
the frequency in which the respondent practiced the action described. The design of the
instrument provided an indication of the individuals' overall preference of a teaching style in an adult education setting. Additionally, scores were obtained for each individual on the seven factors or elements that were identified as the specific behaviors that make up an individuals' teaching style.

Section IV provided a second measure of an individuals' teaching style, using the Van Tilburg/Heimlich Sensitivity-Inclusion measure. Sensitivity provides a measure of how aware the instructor is to the needs and concerns of his/her students. Inclusion measures to what extent the instructor involved his/her students in planning and designing their own learning experiences. The Van Tilburg/Heimlich measure consists of two Thurstone equal-appearing interval instruments (one for sensitivity and one for inclusion). Each instrument required eleven items, each one representing an interval point on the scale. Of the eleven items on each scale, respondents were asked to check only the items with which they completely agreed. A mean score between one and eleven was calculated for each individual responding.

Section V of this instrument was used to obtain data on the selected demographic characteristics of each respondent.

To control for measurement error, a panel of experts in the fields of Extension Education and Adult Education (Appendix B) were asked to review the items in the questionnaire for content validity. Eleven of the fifteen questionnaires were returned by the panel and found to be usable. The questionnaire, with appropriate revisions, was distributed to selected graduate students and professionals in the Extension Education and Adult Education for pilot testing (Appendix B). Fifteen of the seventeen questionnaires were returned and found to be usable.
Cronbach's alpha coefficients were calculated from the data collected in the pilot test for Section I. The number of items in Section I was reduced from eighteen to fifteen. The analysis of the pilot test results yielded a Cronbach's alpha coefficient of .69. For Section II of the instrument the Kuder-Richardson 20 (KR20) test for internal consistency was used. The 20 agree/disagree items in this section were reduced to ten usable items. An analysis of the pilot test results yielded a Kuder-Richardson 20 coefficient of .72. Reliability of the PALS instrument was determined using the retest method. The data generated from the test and retest were used to calculate a Pearson correlation of .92. The Van Tilburg/Heimlich Sensitivity-Inclusion Measure was deemed reliable using the parallel forms procedure. The same population (n = 16) completed similar forms within a few weeks of one another. A coefficient of equivalence of .72 was produced when the two sets of scores obtained were correlated.

Data Collection

Questionnaires were mailed on January 9, 1990, to all 609 members of the target population. The response rate of questionnaires returned by the initial deadline of January 25, 1990 was 59.4 percent or 362 questionnaires. On February 8, 1990 a second complete packet, including an instrument, cover letter and return envelope was mailed to all non-respondents. The deadline for return by this deadline was February 26, 1990. By this deadline a total of 423 questionnaires for a response rate of 69.4 percent had been received. Additional questionnaires received after the final deadline of February 26, 1990 and before the data were entered for analysis were included in the final response rate of 74.9 percent or 453 returned questionnaires. The resulting data sample was comprised of: 53 Expanded Food and Nutrition Educators, 53 Program Assistants, 42 Extension
Associates, 171 County Agents, 32 District Specialists and Directors and 102 State Specialists, Administrators, and Other, including Administrative Professionals

Non-response error was handled using the procedures described for by Miller and Smith (1983). This procedure, called double dipping, involved randomly selecting ten percent of the non-respondents from each of the professional position categories. The individuals selected were telephoned and asked to respond verbally to Section I - the first fifteen questions on the survey related to attitude. Differences between respondents and non-respondents on this variable were examined using t-tests. Miller and Smith (1983) suggest that since no significant differences were found between the two groups that the data can be pooled and generalized to the population.

Data Analysis

Descriptive statistics were first used to summarize and organize the data. Frequencies, percentages, measures of central tendency and variability were used to describe the data. Measures of Association were used to determine the nature and strength of the relationship between variables. Davis' (1971) conventions for describing measures of association were used.

Stepwise multiple regression was used to determine the best predictor(s) of the dependent variable, "extent to which behaviors associated with teaching adults are teacher-centered or learner-centered." The antecedent characteristics initially entered into the regression model included: attitude score, knowledge score, number of adult education classes taken, number of years teaching outside of Extension, academic major in highest degree, gender, score on sensitivity, and score on inclusion. The total $R^2$ was computed to
determine the amount of variance accounted for by the linear combination of the antecedent characteristics.

Summary and Implications of Findings

Findings, conclusions, and implications associated with the four research objectives of the study were summarized below.

Objective One: To describe the faculty and program staff of the Ohio Cooperative Extension Service on all characteristics.

Demographics

The demographic variables of major program area of responsibility, current position within OCES, number of years employed by Extension, gender, age, highest educational degree achieved, academic major in highest degree, number of adult education classes taken, and teaching experience outside of Extension, were included in this study.

Of the 453 individuals which comprised the data sample, the majority identified their major program area of responsibility as agriculture (30.1 percent), followed closely by 4-H (27.6 percent), and home economics (26.9 percent). The remaining subjects reported their program area of responsibility as Community Natural Resource Development (5.5 percent) or Other (9.8 percent).

The majority of the subjects (70.5 percent or 319 individuals) in the data sample were county personnel (Agents, Extension Associates, Program Assistants or Expanded Food and Nutrition Educators). Of that group County Agents comprised the largest category with 37.8 percent (171) of the individuals. The remaining 29.5 percent reported
their current position as that of District or State Specialist or Administrator.

One hundred and twenty three of the subjects (27.6 percent) reported that they had been employed by the Cooperative Extension Service for more than fifteen years. The remainder of the respondents were fairly evenly distributed among the categories of: less than one year (11.4 percent or 51 individuals), 1-3 years (18.4 percent or 82 individuals), 4-7 years (13.5 percent or 60 individuals), 8-10 years (13.2 percent or 59 individuals), and 11-15 years (15.9 percent or 71 individuals).

Gender of the OCES Faculty and Staff was also included as an antecedent characteristic in this study. The distribution of respondents in this category was fairly even. There were slightly more female respondents, comprising 53.7 percent (235) of the data sample. Males comprised 46.3 percent (203) of the sample.

The majority of OCES Faculty and Program Staff reported their age in the 31-50 year age range. This group represented over 70 percent (213) of the respondents. The remaining 30 percent was divided between the other categories. The category of 51 and over had 13.6 percent (60), followed by the category of 26-30 years, with 12.2 percent (54). The smallest category was 20-25 years with only 3.2 percent (14).

The Masters was the highest educational degree reported by 53.4 percent (236) of the respondents, followed by the Bachelors with 17.4 percent (77). Sixty-five respondents (14.7 percent) reported having obtained a Ph.D, and the remaining 14.5 percent (64) reported a high school diploma or GED equivalent as their highest education.

The major area of study most frequently identified by the OCES Faculty and Program Staff was education. Education was identified by 43.6 percent (166) of the respondents as the academic major in their highest educational degree. The next largest category was Agriculture with 21.8 percent (83) and Home Economics with 17.3 percent
(66). The remaining 18.3 percent listed their major as Natural Resources/Biology (24) Social Sciences (16) or Other (26). Individuals reporting that their highest education degree was High School/GED (64) did not report an academic major for highest educational degree.

Also investigated in this study was the number of formal adult education classes taken by Ohio Cooperative Extension Faculty and Program Staff. The majority of the respondents (52.3 percent or 236 individuals) reported having taken no formal classes in the field of adult education. Another 27.7 percent (125) reported that they had taken between one and four formal classes in adult education. The remaining twenty percent (90) participated in five or more adult education classes as part of their formal training. In addition to the number of formal classes in adult education taken, the primary focus or content of those classes taken was also explored. Individuals, when asked to respond to the number of classes they had taken in a specific content area, most frequently reported zero, followed by one or two classes. A very small percentage of subjects reported taking three or more classes in a specific content area. Respondents reported taking one or more classes in each of the following content areas: 36.3 percent (164) in Teaching Methods, 28.3 percent (129) in Philosophy of Adult Education, 26.8 percent (121) in Program Planning, 22.4 percent (101) in Adult Characteristics/Learning Theory, 22.4 percent (101) in Organization and Administration of Adult Programs and 5.1 percent (22) in Other Adult Education classes. These findings support Grabowski's (1976) position that most teachers of adults have never received adequate, extensive or formal training.

When asked if they had professional teaching experience outside of the Cooperative Extension Service, Ohio Cooperative Extension Service Faculty and Program Staff were fairly evenly distributed. Of the 439 respondents, 52.8 percent (232) reported
no outside teaching experience and 47.2 percent (207) reported they did have outside teaching experience. Also investigated was the number of years of teaching youth and the number of years of teaching adults outside of the Cooperative Extension Service. Overall, more individuals were found to have prior experience in teaching youth than adults. When asked specifically the number of years of teaching youth outside of Cooperative Extension, 57.5 percent (261) report zero years, followed by 23.7 percent (107) with 1-4 years of experience. The remaining 18.6 percent (84) reported teaching youth audiences outside of the Cooperative Extension Service for five or more years. Fewer respondents reported prior experience in teaching adults outside of the Cooperative Extension Service. A total of 71.1 percent (321) reported no previous experience. Sixteen percent (72) of the subjects reported one to four years of previous experience with adults, and 12.9 percent (58) reported five or more years of prior teaching experience with adult audiences.

The literature supports the fact that personal factors related to background and environment are related to the roles and behavior of adult educators. Robinson (1979) found the factors of education, including previous experience and professional identification were a contributing influence to an individual’s teaching style preference. Demning (1986) found that significant relationships existed between the teaching/learning process and the gender of the teacher as well as their educational and professional background. Douglass (1982) also found a significant relationship between a teachers’ behavior and his/her specific training as an adult educator, and Franklin (1989) found that philosophical orientation, previous experience, and level of education influenced an educators’ behavior.
Knowledge

Respondents' knowledge related to basic adult education principles and practice was measured using a ten item true and false test. The range of scores on this section of the instrument was 0 - 9. The mean score for all respondents was 4.81. A total of 69.5 percent (299) received a score of 5 or lower, indicating that they had responded incorrectly to at least 50 percent of the statements. Statements were developed based on a review of the current literature in the field of adult education. It can be concluded that Ohio Cooperative Extension Service Faculty and Program Staff have limited knowledge and understanding of principles and practices of adult education as described in the current literature.

The body of literature available related to knowledge of adult education principles and practices possessed by Cooperative Extension employees is very limited. Douglass (1982) used employees of the Washington State Cooperative Extension Service to determine if a relationship existed between professional training in adult education and the educator's orientation to the collaborative teaching-learning mode as defined by the Principles of Adult Learning Scale. Training in adult education was defined as three or more graduate courses in adult education. Douglass found that a significant relationship did exist between respondents that had no courses or one course in adult education and those who had three or more courses in adult education. While Douglass was exploring relationships, based on the purpose or function of education, it can be assumed that increased training in adult education courses would result in increased knowledge. The majority of Ohio Cooperative Extension employees (52.3 percent) have no formal coursework in the field of adult education. Thus, the low score (4.8) is not surprising.
Attitude

A five-point Likert-type scale was used to measure the extent to which OCES Faculty and Program Staff perceived themselves to be an adult educator. Subjects were asked to respond to fifteen statements using the scale of 1 = Strongly Disagree and 5 = Strongly Agree. A score of three would be average or neutral. The items were summed and a mean score was calculated. The mean score of all OCES Faculty and Program Staff was slightly positive with a score of 3.51. A total of 69.4 percent (293) of all respondents scored in the range of 3.2 - 3.7. The next largest group, consisted of 19.7 percent (83) who showed a stronger positive attitude with mean scores of 3.8 or higher. The smallest group, consisted of 10.9 percent (46) whose scores were 3.2 or lower, indicating a lower acceptance in the belief that their role is an adult educator. Overall, the majority of OCES faculty and program staff exhibit a neutral to slightly positive attitude toward perceiving their role to be an adult educator.

The literature supports that a positive attitude is an integral part of what constitutes an individual’s teaching style. Fisher and Fisher (1970) state that the attitudes teachers hold toward instructional programs, resources and the type of student they prefer to work with make up their teaching style. Attitudes and beliefs also comprise an individual’s personal and educational philosophy. Boone (1985) states that an educators’ personal values, goals and skills, combined with professional values and goals reflect an individuals personal philosophy of adult education. Supporting that same idea, Conti and Welborn (1986) suggest that the specific teaching style an individual exhibits is the operational behavior of the teacher’s educational philosophy.
Perceived Teaching Style - Principles of Adult Learning Scale (PALS)

The Principles of Adult Learning Scale (PALS) is a summated six-point Likert-type scale with values from zero to five. Respondents were asked to indicate the frequency in which they practiced the items described in the forty-four statements. The scale when summed ranged in value from 0 to 220. PALS can also be divided into seven factors that identify specific elements that make up teaching style. Scores were determined as an overall score measuring teaching style preference as well as an individual score for each of the seven factors. The factor scores assist in identifying specific strengths and weaknesses.

Based on the analysis of over 700 cases representing a variety of adult education institutions, Conti (1983) determined that the mean score was 146 and the standard deviation was 20. Ohio Cooperative Extension Faculty and Program Staff scored slightly lower than the average with a mean score of 133.4 and a standard deviation of 14.42. PALS scores provide an indicator of overall teaching style and strength of commitment to that style. A low score, those below 146, suggest a tendency toward a teacher-style approach, and scores above 146 support the collaborative or learner-centered approach.

The number of standard deviations in which a score falls was used to interpret the strength of commitment to a particular style. Ranges include an extreme commitment (3 standard deviations or 40 points from the norm mean), to a very strong commitment to a particular style (2 standard deviations or 20-40 points from the norm mean), to the most frequently observed tendency consisting of individuals within 20 points or one standard deviation of the mean who show an increased commitment to specific style.

The scores on PALS ranged from a low of 90 to a high of 176. A total of 68.6 percent (296) of all respondents fell in the category of one standard deviation of the norm
mean of the instrument, with 49.3 percent (213) of that group falling below the mean. The
next largest group, consisted of 26.9 percent (116) fell in the category of two standard
deviations below the mean. Only three percent (13) of all respondents fell into the
extreme categories of three or more standard deviations above or below the norm mean.

According to Conti (1990), these findings are consistent with other applications of
PALS, in which the majority of all respondents fall within one standard deviation above or
below the norm mean. The majority of Ohio Cooperative Extension Service Faculty and
Program Staff support a teacher-centered approach as opposed to a learner-centered
approach. Only 20.8 percent of the total respondents indicated any preferences toward the
collaborative mode, with 19.2 percent falling one standard deviation above the mean,
indicating only an increased commitment.

Additionally PALS is able to identify specific classroom behaviors that make up an
individual's teaching style by looking at seven factors that are consistent with the literature
that describe the collaborative mode. The same rules of interpretation apply as an
indicator of style preference and strength of commitment that apply to each of these
factors.

OCES Faculty and Program Staff scored slightly lower than the norm score of 38
on Factor 1 of PALS - Learner-Centered Activities. The mean score achieved was 36.3.
The largest group of 50.5 percent (218) scored in the range of 30-38, one standard
deviation below the norm mean, and a total of 75.9 percent (330) scored fell within one
standard deviation above or below the mean. Only 1.4 (6) percent fell into the extreme
category of three standard deviations below the mean. Favoring a teacher-centered
approach to Factor 1 of the PALS on Learner-Centered Activities, OCES Faculty and
Program Staff are more likely to exhibit behaviors that rely on or promote, formal
methods of program evaluation, predetermined educational objectives for students, classroom control, and utilize or practice one basic teaching method.

Factor 2 of PALS is Personalizing Instruction. The majority of respondents scored lower than the mean of 31 on this factor. The mean achieved for this factor was 26.2. Two hundred ninety-seven respondents (68.8 percent) scored within one standard deviation of the norm mean, however 59.5 percent (257) of that group fell below the mean. Another 27.8 percent (120) fell two standard deviations below the mean and only 2.8 percent (12) fell in the extreme category of 3 standard deviations below the norm mean. An overwhelming majority of OCES Faculty and Program Staff favored teacher centered behaviors on Personalizing Instruction. Teacher-centered individuals are more likely to plan activities focused on group needs or the instructor's schedule rather than on the unique needs of each student. Lecture is a common presentation method, with limited application of other methods or materials.

OCES Faculty and Program Staff scored only slightly below the norm mean of 21 on Factor 3 - Relating to Experience. The mean score achieved was 20.25. Of all the respondents, 85.2 percent (368) fell within one standard deviation of the norm mean. Only 3 percent (13) fell within the extreme position. The scores achieved indicate only a slight tendency toward the teacher-centered approach, indicating a clearer understanding of the need to plan activities that take into account the student's prior experiences and to relate those experiences to the new learning opportunities.

Of the 432 respondents to Factor 4 - Assessing Student Needs - 78.7 percent (340) of OCES Faculty and Program Staff score the mean score or lower than the norm of 14 for this factor indicating a stronger predilection toward the teacher-centered approach. The mean score for OCES respondents was 12, following within one standard deviation of
the norm score. Teacher-centered educators tend to use a more direct approach with students, assuming they know what the student needs to know and spend less time trying to find out the individual needs and concerns of each student.

Only 18.3 percent of all OCES Faculty and Program Staff scored higher than the mean score of 16 on Factor 5 - Climate Building. Of the 81.7 percent (353) respondents scoring lower than 16, 63.7 percent (275) fell within one standard deviation below the norm mean. The mean achieved by OCES respondents on this factor was 14.3. Teacher-centered educators are less concerned about the climate or environment in which the learning occurs, risk taking is not encouraged, and errors are often seen as a failure rather than accepted as a natural part of the learning process.

Factor 6 of PALS relates to Participation in the Learning Process and is the only factor in which OCES Faculty and Program Staff scored higher than the norm mean on. A high score or learner-centered approach on this factor indicates behaviors that specifically encourage and involve students in determining content and evaluation of the material presented. A total of 47 percent (202) of the OCES respondents scored higher than the norm of 13 with a score of 13.5 or higher and another 15.1 percent (65) received the norm score. A total of 79.4 percent (343) of all of the respondents fell within one standard deviation of the norm mean. Considering the trend of low scores on all of the other factors, it was surprising that respondents favored the learner-centered approach on this factor, yet less so when considering that since it's beginning, the Cooperative Extension Service was found based on the grassroots approach to program planning. Through advisory committees, boards and committees, Extension professionals have long sought to involve local clientele in the planning and design of educational programs.
A score of 13 was the mean norm of Factor 7 of PALS - Flexibility for Personal Development. The mean score achieved by OCES respondents on this factor was 11. A majority (81.3 percent) of all OCES respondents scored lower than the norm on this factor. A total of 3.7 percent (16) of the respondents scored in the extremes of 3 or more standard deviations from the norm mean score. Educators whose scores indicate a tendency toward teacher-centered behaviors are more likely to view themselves as providers of knowledge rather than facilitators of learning. The tendency is the use of predetermined objectives, classroom control and discipline, and the avoidance of controversial or value-laden topics.

Overall OCES Faculty and Program Staff achieved scores lower than the norm average on the Principles of Adult Learning Scale, indicating a predilection toward a teacher-centered rather than a learner-centered approach to teaching style. One exception to this scoring was on Factor 6 - Participation in the Learning Process - in which respondents scored slightly higher than the norm mean, adopting the learner-centered approach. In all cases, the scores achieved fell within one standard deviation of the norm mean. According to Conti (1990), this can be interpreted that respondents show an increased commitment to that specific style as opposed to a very strong or extreme commitment.

**Sensitivity and Inclusion**

The variables of sensitivity and inclusion as a measurement of teaching style were measured using the Van Tilburg/Heimlich Sensitivity-Inclusion instrument. Two Thurstone scales (one for sensitivity and one for inclusion) were completed by each respondent. Each scale contained eleven items describing teacher behavior. Respondents were asked to
check all of the items that they agreed with. A mean score between one and eleven was
determined for each respondent on each scale. The scores when placed on a high/low
continuum and crossed with one another, create quadrants of a two-by-two matrix. An
eleven point scale, resulted in the creation of an ambiguous area, called the "neutral
zone." Individuals scoring in the range of 6.0 - 7.9 fell in the "neutral zone" category.

The mean score achieved by OCES Faculty and Program Staff on the variable
sensitivity was 7.69. Forty-seven percent (202) of all respondents fell in the "neutral zone"
category of 6.0 - 7.9, followed by 43.7 percent (188) who scored high on the sensitivity
continuum with a score of 8.0 or greater. Only 9.3 percent (40) of the respondents fell on
the low end of the continuum with a score of 6.0 or lower.

An even larger percentage of respondents fell in the "neutral zone" category for
the variable inclusion. A total of 64.8 percent (278) scored in the range of 6.0 - 7.9,
followed by 31.2 percent (134) who scored high on the inclusion continuum with a score
of 8.0 or higher.

The majority of all OCES Faculty and Program Staff scores fell in the "neutral
zone." Van Tilburg and Heimlich (1990) postulate that scores in this location on the
matrix indicate an uncertainty in preference and a lack of clarity or predictability in
performance, but clarity on inculturated socially desirable teaching behavior. Individuals
may be reporting what they know to be the desired belief, but may not be actually
translating it into behavior. A large percentage of respondents in both sensitivity and
inclusion place high on the continuum, placing them, if crossing the continua, in the
quadrant label ENABLER. According to Van Tilburg and Heimlich's categories and
relationships, the Enabler is the "ideal" adult educator and possesses a learning-centered
orientation. It is interesting to note that when asked on the Van Tilburg/Heimlich
measure to agree with certain beliefs about sensitivity and inclusion as related to teaching style, the scores reflect a tendency and belief in the learner-centered mode, yet scores on the Principles of Adult Learning Scale, in which respondents were asked to indicate the frequency of practice of certain behaviors, reflected that practice was teacher-centered.

**Objective Two:** To describe the relationship between selected antecedent characteristics.

Relationships between the antecedent characteristics of attitude, knowledge, sensitivity and inclusion and selected demographic variables were explored. Davis's (1971) Measures of Association were used to describe the relationships found. In all cases, relationships among these characteristics were found to be of negligible or low association.

Negligible positive relationships were found to exist between knowledge and number of years employed, attitude and number of years employed and age, sensitivity and highest educational degree and age, and inclusion and number of years employed, age, highest educational degree, number of adult education classes taken, and teaching experience outside of Extension.

Negligible negative relationships were found to exist between knowledge and age, attitude and highest educational degree, sensitivity and number of years employed and age and inclusion and age.

Low positive relationships were found to exist between knowledge and professional position, highest educational degree and number of adult education classes taken, and between attitude and professional position, and number of adult education classes taken. Low positive relationships were also found between sensitivity and professional position and inclusion and professional position.
Low negative relationships were found to exist between knowledge and teaching experience outside of Extension, and between inclusion teaching experience outside of Extension.

**Objective Three:** To describe the relationship between selected antecedent characteristics and the dependent variable.

Objective three of this study sought to explore relationships that existed between selected antecedent characteristics utilized in this study and the dependent variable, "the extent to which behaviors associated with teaching adults are learner-centered or teacher centered as measured by the Principles of Adult Learning Scale." Relationships were explored between the selected antecedent characteristics and the total or summated score on PALS, as well as each of the seven factors or elements that comprise the total PALS score. Relationships found were described using Davis's Measures of Association (1971). All relationships were found to be of negligible or low association.

Negligible positive relationships were found to exist between total PALS and number of years employed and teaching experience outside of Extension; Factor 1 - Learner-Centered activities and highest educational degree, sensitivity and inclusion; Factor 2 - Personalizing Instruction and number of years employed and teaching experience outside of extension; Factor 3 - Relating to Experience and professional position, number of years employed, highest educational degree, inclusion and teaching experience outside of extension; Factor 4 - Assessing Student Needs and professional position, highest educational degree, number of years employed, attitude, sensitivity, inclusion, and teaching experience outside of Extension; Factor 5 - Climate Building and number of years employed, age, knowledge, and inclusion; Factor 6 - Student Participation
in the Learning Process and highest educational degree and teaching experience outside of extension; and Factor 7 - Flexibility for Personal Development and number of years employed, attitude, and teaching experience outside of Extension.

Negligible negative relationships were found to exist between Factor 1 and number of years employed, age, and teaching experience outside of Extension; Factor 2 and highest educational degree; Factor 3 and knowledge; Factor 6 and knowledge; and Factor 7 and age and number of adult education classes taken.

Low positive relationships were found to exist between total score on Pals and professional position, highest educational degree, age, attitude, sensitivity, inclusion and number of adult education classes taken; Factor 1 - Learner-Centered Activities and professional position, and knowledge; Factor 2 - Personalizing Instruction and professional position, age, attitude, sensitivity, inclusion, and number of adult education classes taken; Factor 3 - Relating to Experience and age, attitude, sensitivity, and number of adult education classes taken; Factor 4 - Assessing Student Needs and professional position, age, and number of adult education classes taken; Factor 5 - Climate Building and professional position, highest educational degree, attitude, sensitivity, number of adult education classes taken, and teaching experience outside of Extension; Factor 6 - Student Participation in the Learning Process and professional position, number of years employed, age, attitude, sensitivity, inclusion, and number of adult education classes taken; and Factor 7 - Flexibility for Personal Development and professional position, highest educational degree, knowledge, sensitivity, and inclusion.

Low negative associations were found between the characteristics of Factor 1 and number of adult education classes taken; and Factor 4 and knowledge.
All relationships between the total PALS scores and the antecedent characteristics were found to be positive. Although all of the relationships were at the negligible or low association levels, the characteristics of attitude, sensitivity, inclusion, number of adult education classes and academic major exhibited stronger relationships than other characteristics measured. The literature is supportive of these findings, however, it was somewhat surprising, based on the literature, that the strength of the relationship was not greater. Personal factors related to background and environment, including education, previous experience, and professional training, including number of adult education classes taken have been found to be significantly related to teaching style preference (Robinson, 1979; Demming, 1986; Douglass, 1982; Pearson, 1980; and Franklin, 1989). Attitude was also more highly correlated with teaching style preference. The literature supports that attitudes, beliefs and philosophical orientation are an integral part of an individuals preferred teaching style (Franklin, 1989; Boone, 1985; Conti, 1985; and Conti and Welborn, 1986).

That the characteristics of sensitivity and inclusion were more highly correlated to the total PALS scores is not remarkable. The six factors identified by Van Tilburg/Heimlich (1989) in the factor analysis process show a lot of overlap with the seven factors identified as the specific elements that make up teaching style as measured by Conti’s Principles of Adult Learning Scale. Van Tilburg/Heimlich define their six factors as: 1) Basis for Instructional Method; 2) Educator’s Perception of Students; 3) Educator’s Perception of Self; 4) Educator’s Perception of Student Needs; 5) Group Process; and 6) Classroom Methods. Conti’s seven factors include: 1) Learner-Centered Activities; 2) Personalizing Instruction; 3) Relating to Student Experiences; 4) Assessing Student Needs; 5) Climate Building; 6) Student Participation in the Learning Process; and
7) Flexibility for Personal Development. Names and titles of the factors differ, but an analysis of the intent of each of the factors indicate an overlap in content.

The relationships found between each of the seven factors of PALS and the selected antecedent characteristics were all found to be low or negligible. However, factors 2 and 6 had higher correlation coefficients with more characteristics than the other factors. Factor 2 of PALS is Personalizing Instruction and showed higher correlations with program area (specifically, home economics), age, attitude, sensitivity and inclusion. Personalizing Instruction focuses on utilizing a variety of methods and techniques that personalize learning to meet the specific and unique needs of each participant in the learning process. As defined, the characteristics of sensitivity and inclusion, would include many of the same elements critical to personalizing instruction. Thus a higher correlation would be expected. Respondent's attitude toward their role as an adult educator has already been shown to have a significant relationship to teaching style preference. It stands to reason that an educator who perceived themselves to be an educator of adults will more likely recognize and adhere to some of the basic principles and practices that support the collaborative mode, including designing learning opportunities to meet the specific needs of the student or clientele. As a group, individuals, in the program area of home economics exhibited a slightly higher tendency to personalize instruction.

Factor 6 of PALS deals specifically with the amount of involvement the student has in determining the nature and evaluation of the content material presented. It was found to be more highly correlated with the characteristics of number of years employed, attitude, sensitivity, and number of adult education classes taken. The Cooperative Extension Service, as part of its basic philosophy, encourages and promotes the active involvement and participation of clientele in decision making about educational programs
and content. A slightly higher relationship was found with those employees with a longer tenure with the Cooperative Extension Service. Also found was a relationship with the number of adult education classes taken. Specifically, those individuals with more formal training in adult education were more likely to involve students in the design and evaluation of the learning process. Literature related to educational background, and professional training, support a relationship with the collaborative teaching/learning mode.

A review of the specific relationships between selected characteristics indicate that while some differences do exist, those differences are very minimal. Ohio Cooperative Extension Service Faculty and Program Staff were found to be very similar on almost all characteristics analyzed. Based on those minimal difference, however, a profile of individuals who were most likely to adopt the collaborative teaching-learning mode and those whose tendencies were more teacher-centered were found. Teacher-centered individuals were more likely to be in program areas categorized as other, in a paraprofessional role, employed four to seven years, under the age of 30, and possessing as the highest degree a high school education or equivalent. Learner-centered individuals were more likely to work as a district or state specialist/administrator in the home economics program area, employed between eight and fifteen years, are between the ages of 41-50 and possess a master’s degree as their highest degree.

**Objective Four**: To determine the best predictor(s) of the dependent variable, "teaching style preference as measured by PALS."

**Results of the Stepwise Regression Technique**

Four antecedent characteristics were found to be the best combination of variables to predict the dependent variable, "perceived teaching style as measured by PALS." In
order of most to least variance accounted for, they were: sensitivity, inclusion, number of adult education classes taken, and attitude. The total amount of variance accounted for by the linear combination of the four characteristics was 16 percent ($R^2 = .155$). The single best predictor was “sensitivity” which accounted for 9 percent of the variance of the dependent variable.

That sensitivity and inclusion combined account for over 11 percent of the total variance and are the highest predictor(s) of the dependent variable are not surprising. Correlations between sensitivity and inclusion and PALS were found to be higher than any other characteristics. Analysis of the specific elements that comprise both sensitivity and inclusion and the seven factors of PALS, show many similarities and overlaps in definition and content (Van Tilburg/Heimlich, 1989; Conti, 1979).

The number of adult education classes taken relates specifically to the formal educational and professional training an individual has received. Reviews by Douglass (1982) and Pearson (1980) found that a significant relationship existed between an educator's professional training, as measured by number of adult education classes taken, and teaching behavior. Robinson (1979) also found four specific factors to influence an educator's behavior. Identified as one of these factors was, educational background, previous experience, and professional identification. An additional study by Franklin (1989), supports these previous findings that philosophical orientation, level of education and previous employment experience influence behavior.

That attitude was a contributing predictor of behavior was not surprising. What was surprising was the strength of that relationship was not greater. Who we are and everything we do relates to our personal and professional values, beliefs, attitudes and philosophical orientation. Literature related to education, teachers, and teaching style
support that attitude and philosophy are integral components to explaining behavior. (Fisher and Fisher, 1979; Boone, 1985; Conti, 1985; and Conti and Welborn, 1986).

**General Summary of Conclusions of the Study**

Ohio Cooperative Extension Service Faculty and Program Staff overall exhibited low levels of knowledge of adult education practices and principles as related to the current literature. They indicated a neutral to slightly positive attitude toward their role as an adult educator.

On the dimensions of sensitivity and inclusion, the tendency to support the socially desirable responses were evident as the majority of scores reflected an ambiguity of a clarified style and a preference toward the high sensitivity, high inclusion mode supporting a learner-centered orientation. However, measurement of the frequency of specific behaviors on the Principles of Adult Learning Scale (PALS) indicate that a more teacher-centered teaching style has been adopted by the majority of OCES Faculty and Program Staff. Scores on the total PALS and six of the seven factors demonstrate that Ohio Cooperative Extension Faculty and Program Staff exhibit more teacher-centered tendencies than learner-centered.

While differences did exist on some of the specific characteristics, those differences were found to be minimal. Ohio Cooperative Extension Faculty and Program Staff were found to be similar across most characteristics defined. Educational level, professional training, number of adult education classes taken, and attitude were related to teaching style as measured by PALS. District/State Specialists/Administrators in home economics, employed eight to fifteen years, age 41-50 and holding at least a Master's degree tended
to be more learner-centered in their teaching style preference.

The characteristics of sensitivity and inclusion and the Principles of Adult Learning Scale were found to be related. An investigation of the specific elements that comprise the major factors on both scales were found to not only be similar but to overlap.

The best predictors of "perceived teaching style as measured by PALS" included sensitivity and inclusion scores, number of adult education classes taken and the attitude of the individual.

**Recommendations**

Malcolm Knowles (1970) suggests that the teacher is the single most important variable influencing the dynamics of the learning environment. Past research efforts have focused on understanding learning styles of students, teaching methods, and adaption of teaching methods to student learning styles. In the past decade, we have seen an emergence of the need to understand the inherent style of the educator and the impact that style has on learner outcomes. The measurement and understanding of one's style provides not only an external measure of classroom effectiveness but also serves as an internal assessment of values, beliefs and philosophical orientation.

The Cooperative Extension Service is the world's largest informal adult education organization. Daily, Ohio Cooperative Extension Service Faculty and Program Staff provide educational programs and learning opportunities for the clientele it serves. The findings of this study can be used to assist individuals in the organization in making decisions regarding their personal teaching style, including decisions regarding professional development opportunities. Additionally, the findings should be made available to aid
administrators in decision-making, to assist in developing guidelines and policies for hiring and retention, and for the development of personal and professional development of its employees.

Based on the findings, conclusion, and implications of the study the following recommendations were made:

1. Attitude was determined to be one of the best "predictors" of perceived teaching style as measured by the Principles of Adult Learning Scale. Attitudes for OCES Faculty and Program Staff were found to be neutral to slightly positive. The organization can through mission, philosophy and action send messages to support and reward good teaching. Support and encouragement should be provided through opportunities (financial as well as time commitments) for personal and professional growth and training. Recognition and rewards should be provided for individuals demonstrating not only "good teaching," but creative and innovative approaches to teaching-learning. Attitude change must come from within. What individuals believe to be true about themselves represent a major influence on attitude. If an Extension employee believes that the organization is supportive and committed to enhancing adult education, and recognizes and rewards behavior consistent with that mission, attitude can be positively influenced.

2. Knowledge levels of adult education principles and practices possessed were found to be low. Positive relationships were found between education, number of formal adult education classes taken, highest educational degree, and professional position. Current employees should be encouraged and provided opportunities to improve their knowledge level through personal encouragement as well as in-service training opportunities provided by the organization.
3. Professional training, including the number of formal adult education classes taken, was also one of the best "predictors" in determining perceived teaching style. The majority of OCES Faculty and Program Staff had little or no formal training in adult education coursework. Additionally, a review of in-service trainings offered in the last five years show that information on working with adult audiences has only briefly been addressed. The Ohio Cooperative Extension Service should require as a qualification for hire, and/or continued employment some formal training in adult education.

4. OCES employees were found to be more teacher-centered than learner-centered in their approach to teaching style. It is important for individuals to understand that a preference or tendency toward one style or another is neither "good" nor "bad." It is an assessment of what is. The literature on adult teaching-learning theory supports a learner-centered or collaborative approach as optimal in many situations. However, the literature also supports that teaching style preference is a composite of an individuals' beliefs, values, and personal and professional philosophy. Individuals as well as the Cooperative Extension Organization should assess their own philosophy and values and determine if the preferences determined are congruent with their philosophy. An assessment of values and philosophy provides a foundation for considering change and future direction. The use of tools such as strategic planning, mission and values clarification, and task forces, are just a few means for guiding an organization and its employees into planned change.

5. The organization can also assist individuals choosing to make changes or adaptations. Personal development plans that provide support and encouragement for growth can be developed with the individual, their supervisors and administration. In-service training opportunities can be provided for teacher-centered individuals desiring to make
changes in their style. Opportunities for learner-centered individuals desiring to improve their effectiveness should also be made available.

6. A mentoring system, pairing teacher-centered individuals desiring to make adjustments in their personal style, with learner-centered educators could be implemented. Also because it was found that newer employees, or those with less tenure, were more likely to be teacher-centered. A mentoring system could be beneficial to the individuals as well as the organization. Individuals participating in a mentoring program would have the opportunity to observe and model behaviors they may wish to adopt. Working with a positive role model can influence attitude and increase self-esteem and confidence. Opportunities would be available to share ideas, concerns, problems and success as well as individuals would have an opportunity for immediate feedback on all phases of the teaching-learning exchange from planning to evaluation.

Summary

A key concern, is not whether or not an individual's teaching style preference is teacher-centered or learner-centered, but in understanding what that interpretation means, what factors influence or contribute to the preference, determining consistency between personal values and philosophy and style preference, adjusting for inconsistencies and learning to adapt method and situational factors to establish the most effective teaching-learning interaction. The recommendations discussed support Conti's position that the Principles of Adult Learning Scale can successfully be utilized as an assessment tool for personal and organizational growth and development.
Need for Further Study

Compared to teaching children, learning style, and other topics related to understanding and teaching the adult learner, the interest in teaching style of adult educators is still relatively new. It has only been in the past ten to twelve years that instruments have been developed and used to measure teaching style and that research studies have been conducted to examine the relationships between teaching style and adult learning. What is known today is still a relatively small portion of the vast amount of information to be learned about teaching style and its impact on the adult learner. In this study, thirteen antecedent characteristics were used to help understand the elements related to the perceived teaching style of adults of Ohio Cooperative Extension Service Faculty and Program Staff. Only sixteen (16) percent of the total variance in the dependent variable was accounted for by those characteristics.

Based on the judgement of the researcher, the following suggestions for further study have been made:

1. This study was only able to account for 16 percent of the total variance in explaining or predicting factors related to perceived teaching style of adults by Ohio Cooperative Extension Faculty and Program Staff. Additional studies looking at different characteristics or combination of characteristics to try and explain more of the variance should be conducted.

2. Replications of the study should be conducted with Cooperative Extension Service in other states to determine similarities and/or differences.

3. The study should be adapted and conducted with other formal and informal adult education organizations and institutions.
4. Attitude and philosophical orientation were strong correlations with teaching style preference. Studies should be conducted that more in-depthly explore this relationship between educational philosophy and teaching style preferences.

5. The measurements of teaching style preference used in this study were self-reports of behaviors and beliefs. Additional research should be conducted to determine if differences exist between self-reported teaching style (behavior) and actual (observed) teaching style. Also, if differences do exist, what are they?

6. The Van Tilburg/Heimlich Sensitivity-Inclusion measure of teaching style is a new contribution to the literature based on measurement of teaching style of adult. Expanded use and data collection using this instrument is encouraged to expand the current body of knowledge.

7. Similarities and overlaps were found between the specific elements and factors that comprise the Van Tilburg/Heimlich Measure and the Principles of Adult Learning Scale. Studies looking specifically at the constructs and elements of each of the instruments should be conducted to determine the extent of any similarities and differences that exist and if these two measurements could or should be used interchangeably.
APPENDIX A

SURVEY INSTRUMENT AND REPORTING FORMS
Part I

**Instructions** - The following 19 statements describe attitudes of Extension professionals about their role as an adult educator.

Briefly reflect on how you feel about the role of an adult educator, and then respond to the following general statements about yourself, your work setting, and the Cooperative Extension Service.

Please indicate the degree to which you agree with each statement by circling the response that best represents your agreement/disagreement with the item. The following scale will be used for responses:

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
</tbody>
</table>

**Example:**

1. I am satisfied with my job.  
   
   | SD | D | U | A | SA |

   In this case, the circled response indicates agreement with the statement.
<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. The term that best describes my job is adult educator.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q2. Awareness of the diversity of the needs of my clientele contributes greatly to my teaching quality.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q3. All CES employees should be required to have some training in adult education.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q4. Adult education concepts apply in 4-H programming.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q5. An effective adult educator encourages maximum learner participation in the program planning process.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q6. Full involvement of participants in self-directed learning experiences probably will not work very well with Extension audiences.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q7. The Extension professional should be in control of a learning experience at all times.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q8. The role of an Extension educator is to be a facilitator rather than an information provider.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q9. A good teacher takes into account the previous experiences of the participants when planning educational programs.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q10. Children and adults should be taught in the same manner.</td>
<td>Strongly Disagree (SD)</td>
<td>Disagree (D)</td>
<td>Undecided (U)</td>
<td>Agree (A)</td>
<td>Strongly Agree (SA)</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>-----------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>-----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Q11. The amount of learning is influenced by the amount of interaction between an individual and his/her environment.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q12. I would be willing to receive additional training to become a better adult educator.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q13. The business of the Cooperative Extension Service is adult education.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q14. Quality adult education calls for teachers who are person-centered rather than subject matter-centered.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>Q15. I utilize the &quot;teachable moment&quot; by accepting errors as a natural part of the learning process.</td>
<td>SD</td>
<td>D</td>
<td>U</td>
<td>A</td>
<td>SA</td>
</tr>
</tbody>
</table>
PART II

Below are statements related to the practice of adult education. Indicate for each statement whether you AGREE or DISAGREE with it by circling the appropriate response.

Q16. Adults have a subject-centered orientation to learning. □ □

Q17. Outcomes of educational programs should be determined by the facilitator through establishing specific learner objectives. □ □

Q18. The primary function of an instructor is to provide knowledge. □ □

Q19. Most adults share a basic style of learning. □ □

Q20. Each adult student prefers one teaching style. □ □

Q21. Learning climates that minimize conflict among participants should be maintained. □ □

Q22. Teaching style has minimal effect on student achievement. □ □

Q23. Adults and children should be taught differently. □ □

Q24. Pedagogy is the art and science of helping adults learn. □ □

Q25. Similar to children, adults also have separate stages in the life cycle which include the attainment of certain skills and social roles. □ □
Part III

The following statements contain several things that a teacher of adults might do in a classroom. You may personally find some of them desirable and find others undesirable. Consider the educational programs you have offered in the last two years in which you have taught an adult audience (age 18 or over). For each item, please indicate the frequency that you practice each action using the following scale:

<table>
<thead>
<tr>
<th>Never</th>
<th>Almost Never</th>
<th>Seldom</th>
<th>Often</th>
<th>Almost Always</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Read each statement carefully. Then respond by circling 0 if you never do the event. If the item does not apply to you, circle number 0 for never. Circle number 1 if you almost never do the event, circle number 2 if you seldom do the event, circle number 3 if you often do the event, circle number 4 if you almost always do the event, and circle number 5 if you always do the event.

Examples:

1. I use stress reduction techniques as a coping mechanism.

   In this case, the circled response indicates that the person seldom practices the action.

WHEN I TEACH ADULTS:

Q26. allow individuals to participate in developing the criteria for measuring success.

Q27. use whatever practices are necessary to maintain control of the learning situation.
<table>
<thead>
<tr>
<th>Never</th>
<th>Almost Never</th>
<th>Seldom</th>
<th>Often</th>
<th>Almost Always</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**WHEN I TEACH ADULTS I:**

Q28. allow participants who have special needs more time to complete activities when appropriate.

Q29. encourage learners to unquestionably accept knowledge offered.

Q30. help learners diagnose the gaps between their goals and their present level of performance.

Q31. provide knowledge rather than serve as a facilitator.

Q32. stick to the instructional objectives that I wrote at the beginning of a program.

Q33. meet informally with clientele to talk about their interests and experiences.

Q34. use lecturing as the primary method for presenting my subject material to adult students.

Q35. arrange the meeting room so that interaction among participants is facilitated.

Q36. determine the educational objectives for each participant.
<table>
<thead>
<tr>
<th>Question</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHEN I TEACH ADULTS I:</td>
<td></td>
</tr>
<tr>
<td>Q37. plan units which differ as widely as possible from an individual's socio-economic background.</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Q38. encourage an individual to motivate himself/herself by confronting him/her in the presence of others during group discussions.</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Q39. plan learning activities taking into account participants' prior experiences.</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Q40. solicit input from clientele regarding the content of educational programs.</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Q41. use one basic teaching method because I have found that most adults have a similar style of learning.</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Q42. use different teaching techniques depending on the individuals being taught.</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Q43. encourage dialogue much among participants.</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Q44. use written evaluations at the end of programs as a performance standard rather than as a program planning tool.</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Question</td>
<td>Never</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Q45. rely heavily on the skills that most adults already possess to</td>
<td>0</td>
</tr>
<tr>
<td>achieve educational objectives.</td>
<td></td>
</tr>
<tr>
<td>Q46. use what the literature suggests that adults need to learn as</td>
<td>0</td>
</tr>
<tr>
<td>my chief criteria for planning learning activities.</td>
<td></td>
</tr>
<tr>
<td>Q47. accept errors as a natural part of the learning process.</td>
<td>0</td>
</tr>
<tr>
<td>Q48. meet individually with clientele to help identify their</td>
<td>0</td>
</tr>
<tr>
<td>educational needs.</td>
<td></td>
</tr>
<tr>
<td>Q49. let each person work at his/her own rate regardless of the</td>
<td>0</td>
</tr>
<tr>
<td>amount of time it takes him/her to learn a new concept.</td>
<td></td>
</tr>
<tr>
<td>Q50. help participants develop short-range as well as long-range</td>
<td>0</td>
</tr>
<tr>
<td>objectives.</td>
<td></td>
</tr>
<tr>
<td>Q51. maintain a well-controlled learning environment to reduce</td>
<td>0</td>
</tr>
<tr>
<td>interferences to learning.</td>
<td></td>
</tr>
<tr>
<td>Q52. avoid discussions of controversial subjects that involve value</td>
<td>0</td>
</tr>
<tr>
<td>judgments.</td>
<td></td>
</tr>
<tr>
<td>Q53. plan periodic breaks when conducting any program.</td>
<td>0</td>
</tr>
<tr>
<td>Never</td>
<td>Almost</td>
</tr>
<tr>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

WHEN I TEACH ADULTS I:

Q54. use methods that foster quiet, productive individual study.

Q55. use formal evaluation techniques at the end of programs as my primary method of evaluating how much participants have learned.

Q56. plan activities that will encourage each learner's growth so that his/her dependence on others diminishes.

Q57. match my instructional objectives to the individual needs of the participants.

Q58. avoid issues that relate to the client's concept of himself/herself.

Q59. encourage a participant's individual thinking by urging him/her to ask questions about societal values and norms.

Q60. allow a client's motives for participating in Cooperative Extension programs to be a major determinant when I write learning objectives.
<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Almost Never</th>
<th>Seldom</th>
<th>Often</th>
<th>Almost Always</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q61. encourage Extension clientele to identify problems that need to be solved.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q62. give participants in my program the same learning activity on a given topic.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q63. use materials that were originally designed for a youth audience.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q64. organize adult learning activities according to the problems that participants encounter in everyday life.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q65. use the same criteria with every group with which I work when measuring what participants have learned.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q66. encourage competition among participants.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q67. use different educational materials with different learners in the same program.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q68. help individuals relate new learning to their prior experiences.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Q69. use problems of everyday living as examples.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Part IV

Q70. Instructions: Q70 and Q71 are a series of statements that describe teacher behavior. Please check only the items with which you agree completely. If you have never been in a teaching situation, react to the items as you believe a teacher should act or believe.

A. I give participants what I believe they need.
B. If I make participants respect me, they will like me.
C. I do not let my care for participants interfere with my teaching.
D. The participants and I need to understand each other.
E. I really need to care about the people I'm trying to teach to be a good teacher.
F. What I want to leave in participants is a heritage that encourages people to care about other people.
G. I can easily diagnose why a participant is having trouble.
H. When a participant reacts negatively to me, I always try to find out what is wrong.
I. I use patience and flexibility in all teaching situations.
J. Every fifteen different individuals come from fifteen different worlds.
K. I think about participants as individuals first and as part of a group second.
L. As soon as I can in a class, I find out who the participants are as individuals, as separate human beings.
M. I like to find out about the participants' homes, their families, their hobbies, what sets them apart as individuals.
N. I want to meet participants' needs the best I can, but still carry out my responsibilities as best I can.
O. I don't get overly concerned with individual needs until I see how they fit in with group needs.
P. I try to encourage the participants' self-esteem by establishing a close relationship with them.
Q71. **Instructions:** Check only the items with which you agree completely. React to the items as you believe a teacher should act.

___ A. To really make instruction successful, participants need to know the relevance of the topic to their lives.

___ B. I am experienced enough in teaching to know what participants need.

___ C. The selection of teaching methods should depend mostly on the nature of the content being taught.

___ D. I always learn from my students.

___ E. I use individual's experiences in planning their instruction.

___ F. A group learns better when a principle or concept evolves from the group.

___ G. I want participants teaching each other rather than me just presenting the information.

___ H. My methods of instruction depend entirely on the make-up of the group.

___ I. I usually stick to my teaching outline.

___ J. My teaching objectives pretty much dictate my teaching strategies.

___ K. I put learning theory, individual competencies, and teaching style together in a logical sequence.

___ L. After I get to know the participants, I eventually direct my teaching toward meeting their objectives.

___ M. I always structure groups for maximum learning.

___ N. I make it clear to participants, right from the start, that I am the instructor and they are the students.

___ O. Sometimes, I include the group of participants in decision-making related to program content.

___ P. If I am a situation that will evaluate participation, I encourage individual input on how outcomes will be measured.

___ Q. I am almost always behind in my teaching outline, because participants ask too many questions in class.

___ R. If an individual is not participating, I try to draw them in rather than letting them "do their own thing."
Part V

Please answer the following questions by circling the letter corresponding to the most appropriate response for each.

Q73. In what Extension program area do you spend the greatest portion of your time? (Circle one).

1. AGRICULTURE
2. HOME ECONOMICS
3. 4-H
4. COMMUNITY/NATURAL RESOURCE DEVELOPMENT
5. OTHER (please specify).

Q73. Professional Position

1. EFNEP STAFF
2. PROGRAM ASSISTANT
3. EXTENSION ASSOCIATE
4. COUNTY AGENT
5. AREA/DISTRICT SPECIALIST
6. STATE SPECIALIST
7. DISTRICT DIRECTOR
8. STATE ADMINISTRATOR
9. OTHER (please specify).

Q74. Please indicate the total number of years you have been employed by the Cooperative Extension Service. (Circle one.)

1. LESS THAN 1 YEAR
2. 1-3 YEARS
3. 4-7 YEARS
4. 8-10 YEARS
5. 11-15 YEARS
6. MORE THAN 15 YEARS

Q75. What is the highest educational degree you have achieved? (Circle one).

1. HIGH SCHOOL/GED (go on to Q77)
2. BACHELORS DEGREE
3. MASTERS DEGREE
4. Ph.D DEGREE
Q76. What was your academic major in your highest degree? (Circle one)

1. EDUCATION, including Extension Education, Agricultural Education, Home Economics Education, Environmental Education, Adult and Continuing Education or General Education.

2. HOME ECONOMICS, including Nutrition, Family Resource Management, Clothing and Textiles, Home Furnishings, Equipment, or Family Relations and Human Development.

3. AGRICULTURE, including Animal Science, Dairy Science, Poultry Science, Agronomy, Horticulture, Agricultural Engineering, or Agricultural Economics.

4. NATURAL RESOURCES OR BIOLOGY, including Entomology, Biochemistry, Plant Pathology, Forestry or Ecology.

5. SOCIAL SCIENCE, RURAL SOCIOLOGY, SOCIOLOGY, PSYCHOLOGY, COMMUNITY DEVELOPMENT, or YOUTH STUDIES.

6. OTHER (please specify) ________________________________

Q77. Please indicate the number of formal classes in adult education you have completed in the following areas:

1. PHILOSOPHY OF ADULT EDUCATION _______ classes

2. TEACHING METHODS RELATED TO THE ADULT LEARNER _______ classes

3. ADULT CHARACTERISTICS AND LEARNING THEORY _______ classes

4. ORGANIZATION AND ADMINISTRATION OF ADULT EDUCATION PROGRAMS _______ classes

5. PROGRAM PLANNING IN ADULT EDUCATION _______ classes

6. OTHER ________________________________ _______ classes

7. OTHER ________________________________ _______ classes

8. OTHER ________________________________ _______ classes

Q78. Do you have professional teaching experience outside of the Cooperative Extension Service?

1. NO If no, continue to question 79.

2. YES

If yes, please indicate the number of years with in each area:

A. YOUTH: _______ years

B. ADULTS: _______ years
Q79. Gender (circle one.)

1. MALE
2. FEMALE

Q80. Age (circle one.)

1. 20-25 YEARS
2. 26-30 YEARS
3. 31-40 YEARS
4. 41-50 YEARS
5. 51 AND OVER

PLEASE FEEL FREE TO ADD ANY COMMENTS YOU MAY HAVE IN THE SPACE BELOW.
Van Tilburg/Heimlich Sensitivity Measure

TEACHING STYLE

Inclusion:
A-9 B-5 C-11 D-10 E-7 F-2
G-3 H-1 I-6 J-4 K-8
SUM ___ + # Circle ___ = ___

Sensitivity:
L-2 M-4 N-1 O-3 P-5 Q-7
R-9 S-11 T-6 U-10 V-8
SUM ___ + # Circle ___ = ___
UNDERSTANDING AND TEACHING THE ADULT LEARNER

Individual Teaching Style Scores

Name: ________________________________

Your overall teaching style score is _____.
This score indicates your general tendency toward either a learner-centered or a teacher-centered approach to instruction.

Your score on Factor 1--Learner-centered Activities is _____.
This score indicates your preferences for the use of formal testing, acceptance of middle-class values, and an orderly instructional setting.

Your score on Factor 2--Personalizing Instruction is _____.
This score indicates your preference for designing the learning situation to fit the individual needs of each student.

Your score on Factor 3--Relating to Experience is _____.
This score indicates your preference for relating the instruction to the learner's prior experience and to everyday life.

Your score on Factor 4--Assessing Student Needs is _____.
This score indicates your preference for finding out what each learner wants and needs to know.

Your score on Factor 5--Climate Building is _____.
This score indicates your preference for establishing a learning climate that is both physically and psychologically comfortable for the learners.

Your score on Factor 6--Participation in the Learning Process is _____.
This score indicates your preference for involving the learner in determining the nature and evaluation of the content material.

Your score on Factor 7--Flexibility for Personal Development is _____.
This score indicates your preferences for viewing the instructor as a facilitator rather than a provider of knowledge and for flexibility in instructional goals and processes once the instruction begins.
APPENDIX B

COVER LETTER, PANEL OF EXPERTS AND PILOT TEST PARTICIPANTS
Dear Colleague,

Enclosed is a mail survey instrument that has been developed for use in a study concerned with Understanding and Teaching the Adult Learner. The overall purpose of this project is to identify, in Ohio Cooperative Extension Service faculty and staff, needs related to understanding and teaching adults and to address those needs through an indepth, extended inservice plan. An inservice scheduled in May will be based on the results of this need assessment.

This instrument will be sent to all Ohio Cooperative Extension staff, faculty and administrators at the county, district and state levels. The instrument is designed to collect information on the following variables: Knowledge of general adult education principles and assumptions, Attitude of Extension employees about their role as an adult educator, and Practice as it relates to teaching style and actions that a teacher of adults might demonstrate in a classroom or educational setting.

Before this instrument can be used, the validity for this study needs to be checked. The instrument has been sent to several experts in the area of adult education for this purpose. Your assistance as an expert in the field of adult education is being sought in determining the validity of this instrument in the following ways:

- content validity of the instrument
- item clarity
- wording
- complexity
- reading level of the instrument
- length
- typographical errors
- format
- threatening items
- the instrument's overall appearance

Your response to this request is needed by December 4, 1989. Please return the instrument with your comments to me in room 205 Ag Admin. or in the enclosed envelope.

Your input to this project is greatly appreciated. Thank you.

Sincerely,

Brenda Seevers
Graduate Research Associate
OCES

The Ohio State University, The United States Department of Agriculture, and County Commissioner's Cooperative
Panel of Experts

Larry Miller, Ph.D
Professor
Department of Agriculture Education
The Ohio State University

Robert Armstrong
Adjunct Professor
College of Education
The Ohio State University

Yvonne Gustafason
doctoral student, Adult Education
College of Education
The Ohio State University

Paula Hook
doctoral student, Adult Education
College of Education
The Ohio State University
(former CES agent, Indiana)

Nikki Conklin, Ph.D
Leader, Program Development
Ohio Cooperative Extension Service
The Ohio State University

Keith Smith, Ph.D
Associate Director
Ohio Cooperative Extension Service
Associate Professor
Department of Agriculture Education
The Ohio State University

Nancy Hudson
Cooperative Extension Agent - Greene Co.
Ohio Cooperative Extension Service
doctoral student
Department of Agricultural Education
The Ohio State University

Richard Poling
doctoral student
Department of Agricultural Education
The Ohio State University

Jo Jones, Ph.D
Leader, Personnel
Ohio Cooperative Extension Service
The Ohio State University
Panel of Experts - (continued)

Joseph Heimlich, Ph.D  
Extension Associate, CNRD  
Ohio Cooperative Extension Service  
The Ohio State University

John Paciorek  
Training Officer  
Wright Patterson AFB  
Dayton, Ohio

Kathleen Thiel, Ph.D  
Ohio Department of Education  
Columbus, Ohio

James Bina, Ph.D  
Private Consultant  
Associate Executive Sessions  
Columbus, Ohio

Robert Woods  
Director of Public Safety  
The Ohio State University

Maddie Weisz  
Trainer  
Ohio Department of Health  
Columbus, Ohio

Emmalou Norland, Ph.D  
Assistant Professor  
Department of Agriculture Education  
Leader, Evaluation  
Ohio Cooperative Extension Service  
The Ohio State University
Pilot Study Participants

Annete Ellis  
doctoral student, OSU  
Department of Agricultural Education  
(former 4-H specialist - Alabama)

Annie Berry  
Data Management Specialist  
Ohio Cooperative Extension Specialist  
The Ohio State University

L.J. Osborn  
doctoral student, OSU  
Department of Agriculture Education  
(former extension agent - Kentucky)

Nikki Conklin, Ph.D  
Leader, Program Development  
Ohio Cooperative Extension Service  
The Ohio State University

Sue Cummings  
doctoral student, OSU  
Department of Agriculture Education  
(state 4-H specialist - Colorado)

Debbie Jones  
doctoral student, OSU  
Department of Agriculture Education  
(former extension agent - Ohio)

Dennis Elliot  
State 4-H Specialist  
Ohio Cooperative Extension Service  
The Ohio State University

Steve Bractkovich  
doctoral student, OSU  
Department of Agriculture Education  
District Forestry Specialist  
Ohio Cooperative Extension Service  
The Ohio State University

Emmalou Norland, Ph.D  
Assistant Professor  
Department of Agriculture Education  
Leader, Evaluation  
Ohio Cooperative Extension Service  
The Ohio State University

Joanne Bankston  
doctoral student, OSU  
Department of Agriculture Education  
(extension specialist - Kentucky)
Pilot Study Participants - (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cathy Martinez</td>
<td>doctoral student, OSU</td>
<td>Department of Agriculture Education (former extension agent - New Mexico)</td>
</tr>
<tr>
<td>Donnie King</td>
<td>doctoral student, OSU</td>
<td>Department of Agriculture Education (extension 4-H specialist - South Carolina)</td>
</tr>
<tr>
<td>Richard Clark, Ph.D</td>
<td>Assistant Professor</td>
<td>Department of Agriculture Education The Ohio State University</td>
</tr>
<tr>
<td>John Rohrer, Ph.D</td>
<td>Program Leader, CNRD</td>
<td>Ohio Cooperative Extension Service The Ohio State University</td>
</tr>
<tr>
<td>Serena Howard</td>
<td>doctoral student, OSU</td>
<td>Department of Rural Sociology</td>
</tr>
</tbody>
</table>
APPENDIX C

COVER LETTER
January 8, 1990

Dear Extension Professional:

The Cooperative Extension service is one of the world's largest adult education organizations. As a member of that organization, you are in direct contact daily with the adult learner. To assist you in your role as an adult educator, an in-depth and extended inservice plan has been established. The overall purpose of this plan is to identify in OCES faculty and staff, needs related to understanding and teaching adults. To assure that your needs and concerns are being addressed, a questionnaire regarding specific assumptions, beliefs, attitudes, and practices has been enclosed. Based on your combined responses, the inservice plan will be refined and implemented. One part of the inservice plan is a workshop, "Understanding and Teaching the Adult Learner," scheduled for May 15-16, 1990. All CES professionals are invited and encouraged to attend. Additional training and educational materials such as fact sheets and video tapes are also planned to assist you in your role as an educator of adults.

There are 5 sections to the enclosed questionnaire. For each of the sections, please respond honestly and accurately following the instructions provided. It is extremely important that you answer all the questions in this booklet. Your responses are important and will be kept confidential. The code number on the first page of the booklet will be used to facilitate the entry of the data received. It should take you about 20 minutes of your time to complete all the questions in the booklet. Additional comments and suggestions for the extended inservice plan are very welcome.

Please return the questionnaire in the enclosed, addressed envelope. Faculty and staff on campus should use campus mail. Please return your questionnaire by January 25, 1990.

Your input is very valuable. Thank you for taking the time to complete and return this questionnaire.

Sincerely,

Emma Lou Van Tilburg Norland
Leader, Evaluation

Keith Smith
Associate Director

The Ohio State University, The United States Department of Agriculture, and Country Commissions Cooperating
LIST OF REFERENCES


Imel, M.S. (1989). Teaching adults: Is it different. (ERIC Digest No. 82.) Columbus, Ohio.


Ohio Cooperative Extension Service. (March 29, 1989). Detailed Employee Record - computer printout containing information on Extension employees, including all but Civil Service.


