

KNOWLEDGE, COMMITMENT, AND ATTITUDES OF
HOME ECONOMICS FACULTY TOWARD
THE USE OF COMPUTERS

By

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CHAPTER I

INTRODUCTION

Computers involve members of American society at every level of their daily lives. Already some form of computers is used continually in cars, calculators, microwave ovens, digital watches, and programmable heat controls for homes.

Computers to manage information exchange are an integral part of American business. Computers permeate every aspect of contemporary business transactions. Banks regulate savings accounts with computers. Purchases at department stores and grocery stores depend on them. Airline tickets are sold through computer transactions. Computers are an essential tool for American business.

Computers are also being dispersed throughout the American educational system. Naisbitt (1982) stated that Americans are moving into the information age in society. Managing information with computers is creating changes in higher education as revolutionary as those manifested with the introduction of the automobile. Mayhew (1973) suggested that technological innovations such as the computer could revolutionize higher education in the 1980's.

Home economics is a part of higher education. Faculty in the field of home economics have the unique mission of enabling individuals and families to function in today's society (East, 1980). Computer literacy is as necessary for the present generation to function in society as a

knowledge of writing, reading and mathematics has been to past generations.

Clothing, textiles, and merchandising is a part of the home economics curriculum. Students entering the field of retailing are expected to use computers and computer printouts as an essential tool to process information. The ability to analyze information from computer printouts is inherent to the positions of retail buyers and merchandising personnel. Students in other areas of home economics also need to be computer literate. Unless students of home economics are given the opportunity to learn computer skills, they operate at a disadvantage to students who have learned these skills.

To have computer literate students one needs computer literate faculty. Faculty need a fundamental understanding of technologically-based instructional devices such as the computer (Davidson, 1983). Unless the attitudes of home economics faculty are such that they are willing to learn the skills needed for computer use, students will soon be more computer literate than their instructors.

Purpose and Objectives

The purpose of the study was to assess the attitudes and commitment of home economics faculty toward the use of current technology--specifically, computers--as a tool to help students gain problem-solving skills. The information from the study can become a foundation for use in future curriculum program development. Specific objectives were as follows.

1. To assess attitudes of home economics faculty in higher education toward use of computers as educational tools as associated

with age, gender, number of years of teaching, number of computer classes taken, ability to create a simple program, and ownership of a home computer.

2. To assess the computer literacy of home economics faculty in higher education as associated with age, gender, number of years of teaching, number of computer classes taken, ability to create a simple program, and ownership of a home computer.

3. To assess the commitment of home economics faculty in higher education as associated with age, gender, number of years teaching, number of computer classes taken, ability to create a simple program, and ownership of a home computer.

Problem Statement

Little was known about the attitudes of home economics faculty toward the use of computers as an educational tool. Research was needed to assess the attitudes of home economics faculty and administrators in higher education toward computers, their willingness to use the computer as an educational tool, and the relationship of attitudes, computer literacy, and commitment to age, gender, teaching experience, computer classes taken, programming experience, and home computer ownership.

Hypotheses

Based on the information drawn from the existing literature, the following hypotheses were formulated.

H_0 : There are no significant differences in attitudes of home economics faculty toward the use of computers as an educational tool

with regard to age, gender, numbers of years of teaching experience, number of computer classes attended, ability to create a simple computer program, and ownership of a home computer.

H₀2: There are no significant differences in the computer literacy scores of home economics faculty with regard to age, gender, number of years of teaching experience, number of computer classes attended, ability to create a simple computer program, and ownership of a home computer.

H₀3: There are no significant differences in commitment of home economics faculty in higher education with regard to age, gender, number of years of teaching experience, number of computer classes attended, ability to create a simple computer program, and ownership of a home computer.

Assumptions

A need for assessing the attitudes and commitment of home economics faculty toward computers as an educational tool was based on acceptance of the following assumptions.

1. The use of computer technology will continue to be a growing force in the dissemination of information in American society.
2. Attitudes held by faculty toward new methods of teaching will influence learning.
3. The attitudes of home economics faculty toward computers will affect the use of the computer as an educational tool.

Limitations

The following limitations of the study were acknowledged by the

researcher. The study was limited to home economics faculty with teaching responsibilities at institutions with a four year degree program in home economics. A current listing of faculty with teaching responsibilities was requested from each of the cooperating home economics units. If the listing was not reviewed by each unit to eliminate non-teaching personnel, some respondents with no teaching responsibilities may have been included.

Definitions

Clarification of unfamiliar terminology is appropriate to encourage understanding of a research study. Definitions of terms used in the present study are given below.

Attitude - "An organized predisposition to think, feel, perceive, and behave toward a referent or cognitive object" (Kerlinger, 1973, p. 495).

Commitment - The act of pledging oneself to or identifying with a task or idea, and indicating a willingness to work toward a goal. "Commitment is positive involvement" (Kottkamp, 1984, p. 4). For the study, commitment was determined by the score that was obtained by subtracting the current knowledge score from the desired knowledge score.

Computer Experience - The number of hours of computer class instruction that a respondent has had.

Computer Literacy - Knowledge of what a computer can and cannot do, how computers work, how to use a computer, the various roles of computers in our society, and the impact of computers in society (Levin, 1983). For the study, computer literacy was determined by a score on the current knowledge scale.

Faculty - A faculty member employed at an institution of higher education with a four year degree program and/or a graduate program in home economics.

CHAPTER II

REVIEW OF RELATED LITERATURE

The review of related literature has been organized in four sections. First the theoretical base for the impact of technological innovations on social change will be reviewed. Secondly, the attitudes of adult learners and the attitudes of both students and educators toward use of new technology such as the computer will be discussed. Finally, a discussion of computer literacy and commitment will be undertaken. A summary will conclude the chapter.

Technological Innovation and Social Change

Technological change produces social change. The introduction of the new technology of the automobile created great changes in the mobility of American society. America progressed from a society in which most travel was rarely undertaken beyond the immediate community to a society in which traveling 1,000 miles for a weekend has become commonplace. Technological innovations encourage change in society.

The Nature of Innovation

Innovations include any idea, practice or object which is seen as new by the relevant unit or audience adopting the change (Rogers, 1969). Innovation is characterized by an entirely new and unique situation or phenomenon that is being encountered by an individual or group.

Adoption of an innovation requires more than just knowledge. One may know about a new tool but not use it. The field of education may invest in the research and development of innovations, but see little implementation for use of the new technology because potential users have not received adequate training in the use of the new equipment (Zaltman and Duncan, 1977). For instance, computers were purchased for classrooms in Texas at the request of parents who wanted their children to gain skills toward computer literacy. The computers were installed but used very little at the time because the technology was ahead of the training of educators in the use of the technology.

When an innovation is accepted, there may be both direct and indirect consequences to society. The effects of change in society because of radio, farm mechanization, and industrial automation have each been documented (Rogers, 1969). These innovative changes yielded social consequences which included direct adjustments in the social system intended and recognized by societal members. Other types of consequences were indirect and were neither expected nor recognized by participants at the time of adoption of the innovation (Rogers, 1969). Adoption of innovations implies social change.

Social Change

All innovations imply change, but not all change produces innovation (Zaltman and Duncan, 1977). Schein and Bennis (1965) defined change as the induction of new patterns of action, belief, and attitudes among substantial segments of the population. Zaltman and Duncan (1977) viewed change as follows:

Change is defined as the re-learning on the part of an individual or group (1) in response to a newly perceived

requirement of a given situation requiring action, and (2) which results in a change in the structure and/or functioning of a social system (p. 10).

There were two major schools of thought concerning innovation and change (Schein and Bennis, 1965). One school believed changes in education arose from internal factors (Rogers, 1969). The other was based on the concept of external factors which produced change (Zaltman and Duncan, 1977). Both sides of the issue will be presented.

Internal Change Model

Internal change models identified the sources of change as developing from within the organization (Williams, 1983). Dissatisfaction with current procedures induced a desire for new procedures. As a problem within the organization arose a search for a new solution occurred. Problems were not the only cause of adoption of innovations, however. With regard to the internal change model, the adoption of an innovation may depend on the fact that either a problem was identified and a solution was sought, or that an innovation was considered attractive so applications of the innovation were suggested.

Rogers (1969) identified four major factors of the internal change model. These factors included the innovation, its communication from one individual to another, over time, and among the members of a social system.

The rate of adoption of an innovation is affected by a number of characteristics: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1969). The more advantageous an innovation appears to be, the more quickly it will be adopted. An innovation will be adopted more quickly if it can be perceived as

compatible with the user's past experience and values. An innovation will be more readily adopted if it can be easily understood. An innovation instituted on a trial basis has less perceived risk for the user and so is more easily adopted. The innovation will be more easily adopted if results of the innovation can be seen easily. When a user of an innovation can observe these characteristics, the chances of adoption of the innovation are increased.

Communication channels were another major factor in the adoption of an innovation (Rogers, 1969). Communication was described as the transmission of ideas from some source to another with the intent of changing behavior (Rogers, 1969). Mass media and interpersonal communication were the channels most frequently used. Mass media communicated new ideas quickly. However, to persuade a receiver to have a favorable attitude toward an innovation, interpersonal communication was the most effective channel.

A third major factor was time. Change can be affected over time in a number of ways. Rogers (1969) divided the time element into three factors: the innovation-decision process, the degree of individual innovativeness, and the rate of adoption of the innovation in the social system.

There were four stages in the innovation-decision process. To begin the process an individual gained information about the innovation, and developed a favorable or unfavorable attitude toward the innovation. Next a decision was made to adopt or reject the innovation and then additional information was sought to reinforce the decision.

Since people adopt innovations at varying speeds, the inherent innovativeness of the individual was also a consideration. Individual

categories included innovators, early adoptors, early majority, late majority, and laggards. These categories formed a continuum which in fashion theory was illustrated by the bell curve.

The fourth factor identified by Rogers (1969) was the social system. The social system in which the individual functions may also influence the rate of adoption of an innovation. Rogers (1969) suggested that social systems defined as modern accepted innovations more readily than those viewed as traditional.

The internal change model focused on the social system and the individuals within that system. Followers of the internal change model believed that adoption of innovations occurred in response to an internal problem to be solved, or in response to ideas from individuals within the organization. Followers of the external change model took issue with this view of the reason for adoption of an innovation.

External Change Model

Proponents of the external change model argued that adoption of innovations occurred only after there were changes in societal conditions at large. According to external change theory, adoption of innovations by individuals or organizations occurred as a result of pressure from the environment or from pressure by social, economic, or political institutions. The most important factor influencing change in education according to Levin (1976) was organized society.

The educational system corresponds to the social, economic, and political institutions of our society and . . . the only way we can obtain significant changes in educational functions and relations is to forge changes in the overall social, economic, and political relationships that characterize . . . (organized society) (p. 23).

Organized society affects education both through formal government policies and through the values, attitudes, and expectations of individuals as citizens of their society. Levin (1976) proposed that changes in education will come only when divisive factors arise and the social system adjusts to these contradictions. The educational systems then change to meet this adjustment. Change in society requires the educational system to change so that it will remain functional.

Zaltman and Duncan (1977) indicated that individual change in behavior occurs only when individuals perceive a different situation in society. Re-learning on the part of individuals or groups occurs as a result of the change in the structure or function of social systems. Innovations therefore can be introduced when significant changes are experienced by the larger society. Zaltman and Duncan (1977) stated:

Change strategies that neglect the social and physical context of the situation in which change takes place are missing some of the important causes of behavior . . . in order for change to permeate the system this change must be supported throughout the system (p. 21).

Emphasis of the individual as a change agent may fail to take into account the larger cultural and social mix which promoted change. In contrast, Rogers (1969) referred to a diffusion effect where there was increasing pressure on the nonadopter to accept the innovation within the organization. He proposed that the level of knowledge and adoption of innovation by a social system caused a corresponding increase in pressure on nonusers to adopt the new technology.

In summary, two major perspectives on the theory of change and innovation were discussed. The internal change model represented change arising from within the educational system. The external change model viewed changes in education developing only in response to the wider

changes of society as a whole. These alternative views suggest that to have change in education certain conditions must exist. There must be acknowledgment of a problem and a search for the solution. To utilize innovations there must be both a knowledge and desire to use the innovation and a desire to convince others of its value (Williams, 1983). To accommodate change, society must redefine necessary adult competencies and encourage the education system to change in order to provide these competencies.

Attitudes Influence Change

Induced change may have three basic goals. The goals may be 1) to change attitudes, 2) to change behavior, or 3) to change both attitudes and behavior. Change in attitude toward an innovation does not always preclude change in behavior (Zaltman and Duncan, 1977). Attitudes toward an innovation like computer technology may be favorable, but without a behavioral change the computer will not be used. In addition, the attitudes of adults toward learning have distinctively different characteristics from those of younger students. Characteristics of attitudes of adult learners, the attitudes of students toward the new technology of computers, and the attitudes of educators toward use of computer technology will be discussed in the following section.

Attitudinal Characteristics of Adult Learners

A number of characteristics distinguish the attitudes of adult learners toward education. For adults, education is oriented toward immediate need satisfaction (Mozes, 1982). This immediate need

orientation differs from the orientation of children, who learn to meet future needs. For many adults, education may be a second or third priority in relation to other responsibilities. Many adults have a wide range in interests and experience which can be valuable in the classroom. Adults often have a more static pattern of thinking and must be encouraged to accept new ideas. When unfamiliar ideas are presented adults may view the concept with distrust. Adults may lack self confidence in their ability to accomplish unfamiliar tasks.

To encourage adults with low levels of self confidence to participate in lifelong learning, adult learning activities can begin with learning experiences which have a low threat level. Self-directed learning projects are nonthreatening. Through low-threat learning experiences adults develop positive attitudes toward continuing education (Cross, 1981). As adults gain confidence they will be able to function effectively as lifelong learners within the competitive environment of the classroom.

The adult learner prefers to be involved in planning his own destiny (Knowles, 1980). Cole and Glass (1977) investigated the effects of adult participant involvement in program planning on achievement, information retention, and attitude. Their findings indicated that participation of the adult learner in program planning increased achievement and promoted positive attitudes toward the course.

Measuring knowledge and skill are only two components of learning (Unruh, 1975). The third component is attitudes. Russell (1983) was especially concerned with inservice education for faculty. She emphasized the importance of considering the adult learners' attitudes as well as their knowledge and beliefs when planning educational programs for adults.

The importance of attitude in learning for both the student and the adult learner was investigated. The following sections will address the attitudes of both students and educators toward the use of the computer as a tool to develop decision-making skills.

Student Attitudes Toward Use of Computers

Research showed that children believed computers had infinite patience and were never tired, angry, or faultfinding. Clement (1981) found that students were positive in their attitudes toward computers. Reasons for this positive attitude toward computer instruction included individualized or self-paced instruction, lack of embarrassment because mistakes were made in private, and the immediate feedback of knowing whether an answer was right or wrong. Students also felt that the computer was more objective than were educators.

Clement (1981) suggested that student attitudes can be positively affected by the type of computer-based education and training available. May (1984) reported that two major factors in students' attitudes toward computers were availability of terminals and the quality of help available from computer personnel. Lesson materials with low student error rates which help students feel successful can be beneficial in encouraging positive student attitudes (Lawton and Gerschner, 1982). Students who were asked to point out the main advantages of use of the computer as a teaching tool stated that the computer was an effective tool as a source of information (Offir, 1983). Students who took computer aided tests felt more confident about using computers as a part of their future classroom instruction (Cartwright and Dervensky, 1976).

In a recent study of attitudes toward computers, Griswold (1985) found that education majors were less positive in their attitudes than were business majors. More computer experience may be a factor in creating a more positive attitude toward computers. Loyd and Gressard (1984) found computer experience significantly related to positive attitudes of students toward computers.

Surveys conducted at the University of Cincinnati and Western Michigan University found marked differences between students majoring in business and those majoring in scientifically or technically oriented subjects with respect to attitudes toward computers (Wilson and Trenary, 1981). Business majors held less positive attitudes toward computers. The quality of training in use of computers may be as critical as the actual hands-on experience in creating positive student attitudes in computer use (Wilson and Trenary, 1981).

Attitudes of students toward computers as learning tools were also affected by their instructors (Norris and Lumsden, 1984). Offir (1983) found that while students acknowledged the value of the computer as an information source, the students listed the form of preferred instruction as the one which helped them pass the instructor's tests. Adoption of the computer as an educational tool will involve attitudes of educators as well as those of students.

Educator Attitudes Toward Use of Computers

Computers will not be an effective tool in education unless educators have positive attitudes toward them and believe that computers are a viable tool in their classrooms (Stevens, 1980). Faculty attitudes may range from interest in computers to open hostility toward computers (Clement, 1981).

Ideal conditions would require much more teacher training and teacher freedom to allow educators to become familiar with the technological potential of computers (Education Computer News, 1985). In-service training must begin at the educator's point of need (Wedman and Heller, 1984). If an instructor has intense information needs about operating a computer, it is not appropriate to begin with a series of indepth programs on using computers for teaching. Computer operational information needs must be met first.

Lidtke (1981) suggested that failure to use technology in education may be traced to a number of factors. The first factor was the belief of some educators that little concrete evidence for the effectiveness of the technology existed. The second factor related to teacher resistance to change. Third and fourth, a lack of training in using the equipment and a lack of adequate hardware, software, and course materials adapted for computer use were considered factors. Lastly, a need to change teaching style and the need for extra time and preparation to use the new technology were cited as factors which inhibited use of the computer as a learning tool.

Computer anxiety may affect attitudes of educators toward computers. Jay (1981a) defined computerphobia as a resistance to talking or thinking about computers, fear of computers, and hostile or aggressive attitudes toward computers. Anxiety levels of educators increased with questions about an educator's level of computer expertise and suggestions as to the use of computers as instructional tools. Only seven percent of the student teachers surveyed in Nebraska believed that their training in use of the computer in educating students was adequate. Approximately 73 percent of teacher educators expressed the need for additional

training in computer use (Stevens, 1980). A national survey of music educators showed that a large number of respondents did not consider the computer as an essential tool (Taylor and Parrish, 1978).

Lichtman (1979) found educators to be less enthusiastic about the role of the computer than the general public. Teachers appeared to believe that computers had a dehumanizing effect by treating everyone as a number. Educators also felt insecure in their relationships with computers (Lichtman, 1979). Zoltan and Chapanis (1982) in surveying four professional groups found a dissatisfaction with the computers depersonalizing nature.

Norris and Lumsden (1984) found attitudes of educators toward computers to be a function of distance. Educators' attitudes were favorable toward computers for use in education generally. However, while educators tended to agree with the use of the computer as an educational tool in principle, they were much less favorable to the practice of using them in their own classrooms.

In a study of attitudes of medical and paramedical personnel toward computers, Startzman and Robinson (1972) found that medical faculty and students were more receptive to computer capabilities than were interns or nurses. A favorable opinion of computers was thought to be related to a greater opportunity to learn about computer technology in college. Melhorn, Legler, and Clark (1979) confirmed that a positive attitude was related to increasing familiarity with computers.

There were a number of reasons for discrepancies between attitude and behavior (Zaltman and Duncan, 1977). There may be favorable attitudes toward computer technology, but no use of the computer because the machine is unavailable. Another factor may be the time lag between

favorable attitude formation and actual behavioral change. A lack of knowledge may hinder the adoption of an innovative tool. These factors may each impact on the discrepancy between favorable attitudes toward the computer and its actual use in the educational setting.

Computer Literacy

Interest in computers and computer technology has increased rapidly in the past few years. Members of American society are being confronted by the computer in all aspects of their lives (Leone and Overfield, 1982). Whether in the grocery store, making a plane reservation, or depositing or withdrawing money from a saving account, computer technology is used to complete the transaction.

Molnar (1981) of the National Science Foundation said that in an information based society, computer literacy will be as crucial as energy and raw materials were for the industrial society. He suggested that computer literacy will be a critical issue in higher education in the 1980's.

Definition of Computer Literacy

Computer literacy connotes a minimum level of skill and knowledge about computers in order to be able to function as a member of the contemporary technological society (Barger, 1983). A common definition of computer literacy has not yet been agreed upon (Bruwelheide, 1982). Current definitions include:

Computer literacy has at least three realities or components: an attitude or affective component, a knowledge base, and a function or capability to do some tasks with computers (Jay, 1981b, p. 25).

To be computer literate, a student must know (1) what a computer can and cannot do, (2) how computers work, (3) how to use a computer, (4) the various roles of computers in our society, and (5) the impact of computers in our society (Levin, 1983, pp. 25-26).

Computer literacy may be defined as the skills, knowledge, values, and relationships that allow the teacher to comfortably use the computer as an instructional tool to prepare students to be productive citizens in a computer oriented society (Watt, 1980, p. 26).

Elements of Computer Literacy

Barger (1983) gave three elements of computer literacy. The first element included a basic knowledge of computer structure and operation. This knowledge helps students use the computer safely and effectively, just as they use automobiles. While students may not know how to repair either the automobile or the computer, they will know where the problem is located in order to describe it to service personnel.

A second element included computer applications and limitations. Barger (1983) listed examples of computer applications as using the computer for test generation, individualized lessons, training students in rational procedures, and fostering student involvement and peer cooperation. Limitations included examples of data entry errors, equipment failures, programming errors, and the problem of security.

The third element in computer literacy--the knowledge of programming--is a controversial one. Some do not include programming as a necessity for computer literacy. Barger (1983) proposed that literacy implied the ability to actually read and write, so computer literacy implied programming at least at a minimal level.

Training to Achieve Computer Literacy

Computer literacy training for educators includes both inservice training and credit for summer workshops. Universities with educators who have computer expertise helped train elementary and secondary instructors (Lopez, 1981; Rude-Parkins, 1983). Computer literacy training workshops were held in the Louisville area. Pre-post attitude assessments of workshop participants asked for their feelings about helping others learn how to use computers. Research findings indicated an overall attitude change to a greater willingness to help others learn about computers and a greater level of confidence in doing so after computer training (Rude-Parkins, 1983). Participants were especially enthusiastic about the hands-on training activities in using the computer.

The single most important reason for avoidance of computer usage was a lack of preparation and training in the area (Diem, 1981). Inservice training to meet this need included developing resource centers, devoting part of faculty meetings to the subject of computers, and designating a resource teacher within each school (Martin and Heller, 1982). Smaller groups allowed for greater interaction by participants.

McMeen (1984) found that faculty had a desire to learn how to use computers in their classes. As educators develop an appetite for computer knowledge additional computer training classes can be added. Utrecht (1983) developed an inservice workshop which led to additional classes after school and an evening programming class for university credit. Computer terminals housed throughout a school system will be more easily accessed by educators and will encourage computer use. As educators increase the use of the computer as a tool to teach time

consuming concepts, they will have more time for the one essential quality in any learning situation--that of human interaction of faculty with students (Jernstedt, 1983).

Gabriel (1985) assessed the computer literacy of a national sample of students in grades four, seven, and eleven. He found interest in learning more about computers at all grade levels. Experience, both hands-on and class discussion, differed substantially across grades. The single best determinant of results for the computer literacy test was the amount of hands-on experience that students possessed. Student gender had no significant effect on test results in the experiment.

Cheng, Plake, and Stevens (1985) developed a Computer Literacy Examination: Cognitive Aspect (CLECA) to test levels of achievement in learning about computers. The test focused on two major areas: awareness about computers and basic programming skills. The CLECA test can be used in assessing the cognitive knowledge of high school students about computers as a measure of computer literacy.

Commitment

Once interest in an innovation has been aroused and positive attitudes are shown toward an innovation there is another stage in the social change cycle before the innovation is accepted. Adoption of an innovation requires more than just knowledge (Zaltman and Duncan, 1977). There must be a commitment to developing skill in the use of the innovation before it becomes a common tool. Unless an automobile owner has committed time to developing driving skills, the new car may simply sit unused in the garage.

Rogers (1969) identified a stage in the innovation adoption cycle where additional information is sought to reinforce the decision to

adopt a new technology. Individuals adopt innovations at varying rates. In addition, the social system defined as modern accepts innovations more readily than one identified as traditional (Rogers, 1969). Though adoption rates may vary, the reinforcement stage of acceptance indicates a commitment to gaining additional knowledge and skill in the use of the innovation. Commitment encourages change in behavior.

Freedom of choice encourages commitment toward innovative programs (Kottkamp, 1984). The adult learner prefers to be involved in planning his own destiny (Knowles, 1980): When participants are involved in planning their own programs, motivation and commitment are increased (Cole and Glass, 1977). In organizations where members have control over their participation, commitment to achievement of a common goal is greater. Freedom of choice in adoption of innovations also increases the rate of adoption (Rogers, 1969).

A study of the effects of program choice on student commitment and achievement showed a significant relationship between choice of program and commitment to classroom participation (Kottkamp, 1984). The study operationalized commitment as a score received on a rating scale with seven categories. The seven categories were summed into a composite score.

Professionalism is often used as a synonym for commitment. One of the indications of career commitment is investment of time and effort in work (Corcoran and Clark, 1984). One of the qualities which legitimizes a professional's high social status is expertise (Meisenhelder, 1983). The major goal of the professional in developing expertise in using computers as an educational tool should be a commitment to students to develop the skills needed to function in the information age.

Summary

The student of the 1980's will be faced with constant change. Absorbing the content of a given class will no longer be sufficient to meet the changes so rapidly occurring. Students will need to be process oriented. Students must be taught the ability to think, to solve problems, and to ask relevant questions as they cope with a lifetime of change (Davidson, 1983).

High level cognitive skills have been largely taught to students at the graduate level by example and interaction with an experienced researcher (Davidson, 1983). Education has simply not had the resources to provide the high level skills of reasoning, problem solving, creating, analyzing, and synthesizing for all students. Current technology has developed the tool for the extension of process-oriented instruction to every student. That tool is the computer.

Attitudes toward technology can influence acceptance and use of the innovation. In the information age the use of computers for processing data for informed decision-making will be essential. Computer literacy may well be the key to the future for students. Educators will need to be as computer literate as their students if the present system of higher education is to continue to prepare students to function in a changing society.

CHAPTER III

METHODOLOGY

The major purpose of the study was to assess the attitudes of home economics faculty toward computers as an educational tool. The procedures used to collect the data will be presented in five divisions: the research design, the population and sample, the instrument, data collection, and data analysis.

Research Design

The design of the research was an explanatory descriptive study. In explanatory descriptive studies investigators do not manipulate variables as experimenters do (Van Dalen, 1979). Researchers develop hypotheses about naturally occurring phenomena and assess the inter-relationships of relevant variables. Van Dalen presented evidence for the strategy of descriptive research. He stated:

Before much progress can be made in any field, scholars must possess descriptions of the phenomena with which they work. Early developments in educational research, therefore, as in other disciplines, have been concerned with making accurate assessments of the incidence, distribution, and relationships of phenomena in the field (Van Dalen, 1979, p. 284).

An extensive search of the literature revealed only limited studies of attitudes toward use of computers as an educational tool. No studies in this area were found in the field of home economics. As the research was on the cutting edge of investigation in the area, a descriptive

design utilizing a survey to assess the present status of the use of computers as a teaching tool in home economics seemed logical. A survey technique was utilized to assess relationships among attitudes and degree of commitment and the use of the computer as an educational tool. The associations of age, gender, number of years of teaching, number of computer classes taken, ability to create a simple program, and ownership of a home computer with regard to the variates were also assessed.

Population and Sample

The population consisted of home economics faculty who had resident teaching responsibilities at institutions with four year degree programs in home economics within the continental United States. A potential sample of 719 subjects was selected.

Procedure for the sample selection was a two stage process. First a simple random sample from the 271 units of home economics listed by the National Council of Administrators of Home Economics (NCAHE) and the Association of Administrators of Home Economics in State Universities and Land Grant Colleges (AAHE) was selected. The membership lists of the two organizations were combined and duplications eliminated. From the combined list a simple random sample of 15 percent of the institutions was selected by using a table of computer-generated random numbers (Kish, 1965). The percentage used was supported by Van Dalen (1979, pp. 130-131) who stated that "in descriptive research a sample of 10 to 20 percent of the population is often used."

Forty-one units were selected. Each of the 41 home economics units was contacted for a current and complete list of faculty with teaching responsibilities in the unit.

During the second stage all faculty members' names were compiled into a master list. Each name was assigned a number to expedite the follow-up process for nonrespondents. The total potential sample equaled 719 subjects.

Instrument

The instrument used for the study was a questionnaire (Appendix A). The use of a questionnaire for descriptive research was supported by Van Dalen (1979, p. 152), "for some studies. . .presenting respondents with carefully selected and ordered questions is the only practical way to obtain data."

The questionnaire was divided into three sections (Appendix A). An attitude scale was used to measure attitudes toward use of computers. A score obtained from the current knowledge scale to elicit information on the present level of knowledge was used to evaluate computer literacy. The evaluation measure for commitment used the score obtained by subtracting the current level of knowledge from the desired level of knowledge about computers. The last section was designed to collect information on relevant demographic information.

Attitude Scale

The attitude scale consisted of statements developed by Startzman and Robinson in 1972 to assess attitudes of medical personnel toward computers. The same instrument was used by Melhorn, Legler, and Clark in 1979. The Startzman-Robinson Scale was also used by Ronald (1982) to measure attitudes of nurses toward use of computers.

Startzman and Robinson reported scale reliability by the split-half method to be .87. When coefficient alpha was used to compute

reliability of the attitude scale it was computed to be .63 (Ronald, 1982). Each statement in the attitude scale used a Likert-type format with five responses ranging from strongly agree to strongly disagree. The possible range was from 0 to 4.

For ten of the items a high score indicated a positive attitude. For the remaining six items a high score indicated a negative attitude. Prior to statistical analysis the six items were rescored so that a high score always indicated a more favorable attitude.

Current and Desired Knowledge Scale

The second section of the questionnaire was developed by Ronald (1982) to measure current and desired levels of knowledge about computers. Subjects were asked to evaluate their current and desired knowledge of computers. A Likert-type scale with five possible responses ranging from 0 to 4 was utilized. Content validity was established through reference to the literature and review by two professionals versed in use of the computer in their fields. Reliability of the current and desired knowledge scale was determined by using coefficient alpha. Reliability was found to be .95 for current knowledge and .93 for desired knowledge (Ronald, 1982).

Demographic Information

The third section of the questionnaire was developed by the researcher to collect demographic information. Questions were kept as simple as possible to help the respondent interpret each question correctly.

Use of the Startzman-Robinson Attitude Scale and Ronald's current and desired knowledge scale seemed logical instruments for the study.

The professions of home economics and nursing have similar characteristics. Both professions have strong service and social orientations. In addition, the high percentage of females in each profession is very similar.

Data Collection

Prior to the distribution of the questionnaire for the national study, a pilot test was completed within one state. Procedures for data collection followed a two stage process for both the pilot study and the national sample. Each of the units in the randomly selected sample was contacted for a faculty listing. The questionnaires were mailed to each faculty member on the listing provided by the participating unit.

Pilot Study

The instrument was pilot tested with a selected sample of faculty employed at five institutions with a four year home economics degree program in a southwestern state. The sample used for the pilot study included the home economics units for the state listed in the combined computerized listing of AAHE and NCAHE which had not been randomly selected for the main sample. The pilot study sample included all 75 home economics faculty members with teaching responsibilities located within the five units during the fall semester, 1984.

During the review of the results from the pilot study, two questions on the attitude scale elicited comments from the respondents. After serious discussion, the decision was made to use the attitude scale intact to retain the integrity of the reliability measurements as

reported by Startzman and Robinson and Ronald. In addition, comments from subjects in the national sample would be reported for the questions. One question in the demographic section was restructured for clarity.

National Study

After completion of the pilot study, procedures for the national study were initiated. A letter (Appendix B) to the administrator of each of the 41 units selected at random requested the names of the faculty with teaching responsibilities within each unit.

Stage I. Of the 41 units, 30 responded to the first request. Two universities had discontinued their home economics departments. These two units were replaced in the sample by re-entering the table of random numbers (Kish, 1965) at the exact point where the original selection had ended. The next two random numbers in sequence were selected from the table and the two universities with those assigned numbers were added to replace the discontinued units.

A second request was made to the remaining administrators in the sample three weeks after the first request. A copy of the letter can be reviewed in Appendix B. After this request four additional respondents provided a list of faculty names at their home economics units.

After a second three-week time period had elapsed, the researcher examined the catalogs of the remaining units on microfiche at the university library. The catalog listings varied in dating from 1982-84 to 1984-86. The researcher compiled the most current listing of home economics faculty for each of the remaining nine units from the catalogs on microfiche.

Each of the units was then contacted by telephone. Each unit was read the faculty names listed for its unit. Faculty members who had moved or retired were deleted from each listing and the names of new faculty members were added to develop a current and complete list of faculty at each of the units as of February, 1985. The completed listings for the 41 units equaled a potential national sample of 719 subjects.

Stage II. The second stage of the study was implemented using a mail survey. A number was assigned to each name on the listing as a means of assuring confidentiality and of posting additional mailings to the nonrespondents. A cover letter (Appendix C) and questionnaire were sent to the total potential sample of 719 with a stamped, self-addressed return envelope enclosed. After approximately three weeks, an orange postcard reminder was mailed to the nonrespondents (Appendix C).

After an additional three and one-half weeks had passed, the researcher took a systematic sample of the remaining nonrespondents by using a random start between one and five and using every fifth name thereafter. The subsample of nonrespondents included 56 names.

A third mailing to each of the 56 subjects in the systematic sample included a cover letter (Appendix C) and a second copy of the questionnaire. A second stamped self-addressed envelope was included.

Of the total 719 questionnaires mailed, 475 were returned for a response rate of 66.06 percent. Six could not be delivered by the postal service and were returned to the sender. Thirteen questionnaires contained incomplete data. Even though the researcher requested only names of faculty with teaching responsibilities there were 11 who identified themselves as extension personnel with no classroom teaching

responsibilities. These were eliminated, leaving 445 usable questionnaires for inclusion in the data analysis.

Data Analysis

Most educational and psychological research involves a comparison of means (Huck, Cormier, and Bounds, 1974). A parametric statistical technique was used to analyze and compare mean scores for the data collected. The statistical technique, analysis of variance (ANOVA), allows for testing significance among three or more variables. One of the unique features of the more complex ANOVA designs is its ability to measure an interaction effect, or the relationship that one variable has to another variable in producing significance. The level of measurement for use of parametric statistics should be interval or ratio. The level of measurement for the Likert-type scale used in the instrument for the study was accepted as interval. The alpha level was set at .05.

Attitude Score

Means and standard deviations were computed for the total attitude scores. One-way analysis of variance was utilized to determine if the subgroups within each independent variable were significantly different. The independent variables with three or more subgroups included age, number of years of teaching, and number of computer classes taken. Three separate analyses were completed.

Dichotomous independent variables included gender, computer programming experience, and home computer ownership. A t test was used to determine significant differences between the two groups for each

dichotomous variable. The dependent variable for each analysis was attitude.

Computer Literacy Score

The current knowledge scale was used as the measure for each faculty member's self-evaluation of computer literacy. A mean and standard deviation were calculated for the total scores. One-way analysis of variance was used to test for significant differences among subgroups for the independent variables of age, number of years teaching, and number of computer classes taken. The t test was used to analyze the variables of gender, computer programming experience, and home computer ownership. The dependent variable for each test was the faculty member's self-evaluation of computer literacy.

Commitment Score

Commitment was measured by subtracting the current knowledge score from the desired knowledge score. A higher positive commitment score indicated a greater commitment to learn about computers. A negative score indicated a low or nonexistent commitment to learn about computers. A sample mean and standard deviation were calculated for the total commitment scores.

One-way analysis of variance was used to discern significant differences among the subgroups for the independent variables of age, number of years of teaching, and number of computer classes taken. The dependent variable for each test was commitment. A t test was used to analyze each of the dichotomous variables.

Descriptive Data

Frequency counts and percentages were completed for the descriptive data. Data were entered on the IBM 3081D computer at Oklahoma State University and analyzed using the Statistical Analysis System (SAS).

Summary

The methodology chapter presented the research design and procedures used for the study of attitudes and commitment of home economics faculty toward use of the computer as an educational tool. The population and selection of the sample were described. The data collection instrument contained three sections: the attitude scale, current and desired knowledge scale, and a section on demographics. Finally, a description of the statistical analysis procedures was provided.

CHAPTER IV

FINDINGS AND DISCUSSION

The information included in Chapter IV will present the findings of the survey data collected for the study. The questionnaire used in the survey was divided into three sections: the attitude scale with 16 items, the current and desired knowledge scale with 14 closed-ended items and four spaces provided for comments for each scale, and a section on demographics which contained 11 questions.

Objectives of the study were as follows:

1. To assess attitudes of home economics faculty toward use of computers as educational tools as associated with age, gender, number of years of teaching, number of computer classes taken, ability to create a simple program, and ownership of a home computer.
2. To assess the computer literacy of home economics faculty as associated with age, gender, number of years teaching, number of computer classes taken, ability to create a simple program, and ownership of a home computer.
3. To assess commitment of home economics faculty toward use of computers as associated with age, gender, number of years of teaching, number of computer classes taken, ability to create a simple program, and ownership of a home computer.

The chapter will report first the response rate for the study. Secondly, the demographic information will be presented using frequencies

and percentages. Thirdly, the findings for the attitude scale will be presented. Finally, responses to the current and desired knowledge scale will be used in a discussion of information regarding computer literacy and commitment scores.

Respondent Return Rate

A total of 719 questionnaires was mailed to home economics faculty in 41 selected institutions of higher education in the continental United States. After two mailings 452 questionnaires had been returned. A systematic sample was taken of the remaining nonrespondents. The third mailing to the systematic subsample included 56 names.

The subsample of the nonrespondents was taken to ensure that there were no differences between the characteristics of the nonrespondents and the respondents. If nonrespondents were like the respondents results could be generalized to the population.

Prior to integrating the subsample and the main sample into one group a chi-square analysis was performed. The chi-square analysis showed no differences between the subgroup and the main sample for number of years of teaching, age, computer classes taken, computer ownership, or computer programming. A difference ($p < .05$) was found for gender. A larger proportion of males were found in the subsample than in the main sample. The difference was so slight that no weighting of the variable was deemed necessary before combining the subsample and main sample into one.

After three mailings 475 questionnaires had been returned for a response rate of 66.06 percent. Six of the returned questionnaires were marked as undeliverable by the postal service. Thirteen

questionnaires contained incomplete data. Even though the researcher requested names of only those faculty with resident teaching responsibilities, 11 respondents identified themselves as extension personnel with no classroom teaching responsibilities. These 30 questionnaires were eliminated leaving 445 usable questionnaires for inclusion in the study.

Demographic Findings

The respondents were grouped into five age categories (Table I). The age category with the largest number of respondents was the 40 to 49 year age group. The smallest age category was the 20 to 29 year age group. Females outnumbered males by a large percentage. Female respondents equaled 83.15 percent of the total sample (Table II).

The number of years of teaching was divided into six categories. The largest number of respondents had had over 15 years of teaching experience (Table III). The responses of the other faculty members were spread fairly evenly among the other categories.

Almost 90 percent of all respondents had had some formal instruction about computers. The largest category of respondents (39.78%) had taken one to two computer classes (Table IV). More than 22 percent had completed over five computer classes. Only 11.68 percent had never taken a computer class.

Of the faculty who had taken computer classes 27.78 percent had more than 20 hours of hands-on experience (Table V). Approximately 13 percent had less than one hour of hands-on experience with computers.

In the space provided, twelve individuals specified that they had 50 or more hours of hands-on experience with computers. Nine had used

TABLE I
FREQUENCY AND PERCENT OF FACULTY BY AGE

Age Category	Number	Percent
20 - 29 years	21	4.72
30 - 39 years	134	30.11
40 - 49 years	144	32.36
50 - 59 years	111	24.94
Over 60 years	<u>35</u>	<u>7.87</u>
Total	445	100.00

TABLE II
FREQUENCY AND PERCENT OF FACULTY BY GENDER

Gender	Number	Percent
Female	370	83.15
Male	73	16.40
No answer	<u>2</u>	<u>.45</u>
Total	445	100.00

TABLE III
FREQUENCY AND PERCENT OF FACULTY
BY YEARS OF TEACHING

Years of Teaching	Number	Percent
1-3	60	13.48
4-6	67	15.06
7-9	72	16.18
10-12	52	11.68
13-15	49	11.01
Over 15	142	31.92
No answer	<u>3</u>	<u>.67</u>
Total	445	100.00

TABLE IV
FREQUENCY AND PERCENT OF FACULTY BY
NUMBER OF COMPUTER CLASSES TAKEN

Computer Classes	Number	Percent
None	52	11.68
1-2	177	39.78
3-4	118	26.52
Over 5	<u>98</u>	<u>22.02</u>
Total	445	100.00

TABLE V
FREQUENCY AND PERCENT OF FACULTY WITH
HANDS-ON COMPUTER EXPERIENCE

Hours	Number	Percent
Less than 1	50	12.63
1-4	96	24.24
5-9	61	15.40
10-19	79	19.95
Over 20	<u>110</u>	<u>27.78</u>
Total	396	100.00

the computer for more than 100 hours. Two respondents indicated that they had used the computer for 1000 or more hours.

Less than 27 percent of the faculty responding were currently participating in faculty development activities related to computers. Some comments indicated that no equipment and little or no time during the school year was available to devote to computer classes. One hundred seventy-two respondents replied that, while they were not currently involved with computer classes, they would like to be.

Current computer use categories included research and statistics, administration, classroom management, classroom instruction, and an "other" category. Research/statistics was the area in which the most educators used the computer (Table VI). Respondents using the computer for research daily amounted to five percent, weekly 16 percent, monthly 28 percent, and never 44 percent. The computer was used least for administrative purposes (Table VII). Administrative uses of the computer were limited to five percent of the respondents using it daily, seven percent weekly, and ten percent monthly. Sixty-six percent of the respondents never used the computer for administrative purposes. The finding should be interpreted with caution. It may be possible that many faculty members simply do not have administrative responsibilities.

Thirty-three percent of the respondents had used the computer for classroom management (Table VIII); three percent used it daily, 11 percent weekly, and 19 percent monthly. Approximately one-third of the respondents had used the computer for classroom instruction (Table IX). Slightly more than 19 percent used it monthly, nine percent used it weekly, and five percent used it daily. More than 56 percent of the

TABLE VI
FREQUENCY AND PERCENT OF FACULTY CURRENTLY USING
THE COMPUTER FOR RESEARCH AND STATISTICS

Research and Statistics	Number	Percent
Never	195	43.82
Once a month	125	28.09
Once a week	70	15.73
Daily	23	5.17
No answer	<u>32</u>	<u>7.19</u>
Total	445	100.00

TABLE VII
FREQUENCY AND PERCENT OF FACULTY CURRENTLY USING
THE COMPUTER FOR ADMINISTRATION

Administration	Number	Percent
Never	293	65.84
Once a month	46	10.34
Once a week	31	6.97
Daily	24	5.39
No answer	<u>51</u>	<u>11.46</u>
Total	445	100.00

TABLE VIII
FREQUENCY AND PERCENT OF FACULTY CURRENTLY USING
THE COMPUTER FOR CLASSROOM MANAGEMENT

Classroom Management	Number	Percent
Never	251	56.40
Once a month	84	18.88
Once a week	48	10.79
Daily	13	2.92
No answer	<u>49</u>	<u>11.01</u>
Total	445	100.00

TABLE IX
FREQUENCY AND PERCENT OF FACULTY CURRENTLY USING
THE COMPUTER FOR CLASSROOM INSTRUCTION

Classroom Instruction	Number	Percent
Never	251	56.40
Once a month	87	19.55
Once a week	42	9.44
Daily	21	4.72
No answer	<u>44</u>	<u>9.89</u>
Total	445	100.00

respondents had not used the computer for either classroom management or classroom instruction.

The major current use written in the "other" category by faculty was word processing, identified by 60 respondents. Other uses for which faculty were currently using the computer included class preparation/personal use (12), consulting (4), software development (3), advising (2), child development laboratory (2), historic costume inventory (2), and electronic mail (1).

In the past year very few faculty had been involved in regular sessions related to changing the home economics curriculum to include the use of computers (Table X). Only two percent met weekly, 12 percent monthly, and approximately half had met once or twice in a year. More than a third of the respondents had never been involved with curriculum changes in relation to computers.

Slightly over half (55.06%) of the respondents had done some computer programming (Table XI). Approximately one-third (32.43%) owned their own home computer (Table XII). Computer availability by location (Table XIII) varied widely. Of the respondents who answered the question, approximately 31 percent had a computer available in their office. Of the 425 respondents answering the question, 360 had a computer in their department. Only 26 (5.84%) of the respondents indicated that they had no access to a computer at their institution.

Findings for the Attitude Scale

The Startzman-Robinson Attitude Scale was used to measure attitudes toward computers of home economics faculty with teaching responsibilities in higher education. The reliability of the scale using the

TABLE X
FREQUENCY AND PERCENT OF FACULTY PARTICIPATING IN
THE PAST YEAR IN CURRICULUM SESSIONS
RELATED TO COMPUTERS

Computer Curriculum Sessions	Number	Percent
Never	154	34.61
Once or twice	212	47.65
Once a month	56	12.58
Once a week	9	2.02
Other	9	2.02
No answer	<u>5</u>	<u>1.12</u>
Total	445	100.00

TABLE XI
FREQUENCY AND PERCENT OF FACULTY WITH
COMPUTER PROGRAMMING EXPERIENCE

Programming	Number	Percent
Yes	245	55.06
No	192	43.15
No answer	<u>8</u>	<u>1.79</u>
Total	445	100.00

TABLE XII
FREQUENCY AND PERCENT OF FACULTY
WHO OWN COMPUTERS

Ownership	Number	Percent
Yes	144	32.43
No	300	67.56
No answer	<u>1</u>	<u>.01</u>
Total	445	100.00

TABLE XIII
 FREQUENCY AND PERCENT OF FACULTY HAVING COMPUTER ACCESS
 WITHIN THE OFFICE, DEPARTMENT OR INSTITUTION

Computer Access	Number	Percent
<u>Office</u>		
Yes	140	31.46
No	227	51.01
No answer	<u>78</u>	<u>17.53</u>
Total	445	100.00
<u>Department</u>		
Yes	360	80.90
No	65	14.61
No answer	<u>20</u>	<u>4.49</u>
Total	445	100.00
<u>Institution</u>		
Yes	373	83.82
No	26	5.84
No answer	<u>46</u>	<u>10.34</u>
Total	445	100.00

split-half method was .87 as reported by Startzman and Robinson (1972) for their sample of 338 physicians, paramedical staff and students. Ronald (1982) reported a reliability of .63 using coefficient alpha for a study of 159 nursing educators.

The following null hypothesis was developed regarding attitudes of home economics faculty toward computers:

H₀1: There are no significant differences in attitudes of home economics faculty toward use of computers as an educational tool with regard to age, gender, number of years of teaching experience, number of computer classes attended, ability to create a simple computer program, and ownership of a home computer.

The mean total attitude score for home economics faculty was 41.73 with a range of 26 to 64 and a standard deviation of 6.24. The potential range of scores was 0 to 64.

A factor analysis was completed using the varimax rotation method. The four factors that resulted explained less than 50 percent of the variance in the data. A listing of the questions with factor loadings greater than .5 is given in Table XIV. As the pattern achieved with the varimax rotation explained less than one-half of the variance, no further analysis of the factors was attempted.

Analysis using t tests was implemented to determine whether significant differences existed in attitudes in relation to the variables of gender, computer programming, and computer ownership. No significant differences in attitudes were found (Table XV).

One-way analysis of variance was used to determine if significant differences were present for the variables of age, number of years of teaching, and number of computer classes taken. No significant

TABLE XIV
ATTITUDE SCALE FACTOR ANALYSIS BY ITEM

Factor	Factor Loading
Factor I - Threat to Employment	
Computers are bad because they take people's jobs away.	.70
When a computer is installed in business some people generally lose their jobs.	.71
Machines like computers contribute to the decaying of morals because they make things too easy.	.69
Computers have contributed to the shortage of employment.	.78
Factor II - Computer Benefits	
The modern hospital is badly in need of a revolution by computers.	.68
If it were not for computers, we would probably be ten years behind our present technological pace.	.56
Computers could help slow the rising cost of hospital costs.	.76
Factor III - Value of Computers	
Computers are highly efficient machines.	.69
Computers have created a tremendous breakthrough in the scientific field.	.75
Factor IV - Willingness to Use or Accept Computers	
The computer can store or "remember" an unlimited amount of information.	.68
I would not mind having the computer determine the jobs I do.	.53

TABLE XV
ANALYSIS OF ATTITUDE SCORES USING t TESTS FOR GENDER,
COMPUTER PROGRAMMING, AND COMPUTER OWNERSHIP

Variable	Number	Mean	Standard Deviation	t Value	Probability
<u>Gender</u>					
Female	370	41.83	6.23	1.13	.2573
Male	73	40.93	6.04		
<u>Computer Programming</u>					
Yes	245	41.93	6.26	0.73	.4640
No	192	41.49	6.18		
<u>Computer Ownership</u>					
Yes	144	42.32	6.38	1.39	.1659
No	300	41.45	6.11		

differences were found for age or number of years of teaching (Table XVI). A significant difference in attitudes did occur in the analysis for the number of computer classes taken ($p=.0050$). The greater the number of computer classes taken, the more positive the attitudes. The finding appears to support research studies by Loyd and Gressard (1984), Melhorn, Legler, and Clark (1979), and Zoltan and Chapanis (1982), whose findings indicated that individuals with computer experience had formed more positive attitudes than those without computer experience.

The following null hypothesis was partially rejected:

H_01 : There were no significant differences in attitudes of home economics faculty toward the use of computers as an educational tool with regard to age, gender, number of years of teaching experience, number of computer classes attended, ability to create a simple computer program, and ownership of a home computer. A significant difference in attitudes was found based on the number of computer classes taken.

Two questions on the attitude scale elicited some form of comment from more than three percent of the respondents. The use of "unlimited" in statement 12 was questioned by 35 respondents. Seventeen respondents indicated that the choice between a computer or a mathematician (Question 9) for problem solving would depend on the problem. The Startzman-Robinson Scale was developed through the support of a United States Public Health Service grant in 1972. In the intervening years computers have become more commonplace and some wording in the scale may need revision.

Findings for the Current Knowledge Scale

For the study, computer literacy was determined by a score on the

TABLE XVI
 ONE-WAY ANOVA FOR ATTITUDE SCORES BY AGE, YEARS OF TEACHING,
 AND NUMBER OF COMPUTER CLASSES

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Probability
<u>Age</u>					
Explained	4	153.34	38.34	.99	.4107
Residual	440	16975.41	38.58		
Total	444	17128.75			
<u>Years of Teaching</u>					
Explained	5	154.08	30.82	.79	.5559
Residual	436	16908.03	38.78		
Total	441	17062.11			
<u>Number of Computer Classes</u>					
Explained	3	449.84	164.95	4.37	.0050
Residual	441	16633.91	37.72		
Total	444	17128.76			

current knowledge scale. The items on the current knowledge scale relate to basic concepts which a consensus of authors in the literature viewed as important components for computer literacy. The following null hypothesis was developed with regard to computer literacy:

H₀2: There are no significant differences in computer literacy of home economics faculty with regard to age, gender, number of years of teaching experience, number of computer classes attended, ability to create a simple computer program, and ownership of a home computer.

Reliability of the current knowledge scale was reported to be .95 using coefficient alpha (Ronald, 1982). The mean total score for the current knowledge scale was 23.58 with an actual range of 0 to 56 and a standard deviation of 10.39. The potential range of scores was 0 to 56.

Procedures involving t tests were used to evaluate the dichotomous variables of gender, computer programming, and computer ownership. No significant differences were found for gender (Table XVII). The variables of computer programming and computer ownership each produced a significant difference ($p=.0001$). Respondents who had done computer programming or who owned their own computers had higher mean scores for computer literacy.

One-way analysis of variance procedures were conducted for the variables of age, number of years of teaching, and number of computer classes taken. Current knowledge scores used to evaluate computer literacy produced no significant differences among age groups (Table XVIII).

The number of years of teaching did produce a significant difference ($p=.0232$). Respondents with seven or more years of teaching had higher mean scores than did respondents with one to six years of teaching experience.

TABLE XVII
 ANALYSIS OF COMPUTER LITERACY SCORES USING t TESTS FOR GENDER,
 COMPUTER PROGRAMMING, AND COMPUTER OWNERSHIP

Variable	Number	Mean	Standard Deviation	t Value	Probability
<u>Gender</u>					
Female	370	23.65	10.37	-0.16	.8720
Male	73	23.86	10.45		
<u>Computer Programming</u>					
Yes	245	27.43	9.59	9.55	.0001
No	192	18.65	9.46		
<u>Computer Ownership</u>					
Yes	144	27.51	10.74	5.75	.0001
No	300	21.68	9.62		

TABLE XVIII
 ONE-WAY ANOVA FOR COMPUTER LITERACY FOR AGE, YEARS OF TEACHING,
 AND NUMBER OF COMPUTER CLASSES

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Probability
<u>Age</u>					
Explained	4	912.14	228.03	2.13	.0759
Residual	440	47048.68	106.93		
Total	444	47960.82			
<u>Years of Teaching</u>					
Explained	5	1384.58	276.92	2.63	.0232
Residual	436	45857.93	105.18		
Total	441	47242.51			
<u>Number of Computer Classes</u>					
Explained	3	7391.47	2463.82	26.78	.0001
Residual	441	40569.34	91.99		
Total	444	47960.82			

The number of computer classes taken also produced significant differences ($p=.0001$). Respondents who had taken five or more classes had the highest mean score for computer literacy.

The following null hypothesis was partially rejected:

H₀2: There were no significant differences in computer literacy scores of home economics faculty in higher education with regard to age, gender, number of years of teaching experience, number of computer classes attended, ability to create a simple computer program, and ownership of a home computer. Significant differences were found for the variables of computer programming, computer ownership, number of years of teaching, and number of computer classes attended.

Findings for the Commitment Scale

The following null hypothesis was developed regarding commitment of home economics faculty toward computers:

H₀3: There are no significant differences in commitment of home economics faculty toward use of computers as an educational tool with regard to age, gender, number of years of teaching experience, number of computer classes attended, ability to create a simple computer program, and ownership of a home computer.

The score to measure commitment was derived by subtracting the current knowledge score from the desired knowledge score. A high positive score was used to indicate a high degree of commitment to learning about computers. A negative score was used to indicate little or no desire to learn more about computers. A limitation of using this measurement for commitment was that faculty who already had a high degree of knowledge might not show a high commitment score to the

limited potential differential. For example, a faculty member who indicated a higher degree of computer knowledge by circling a three on the current knowledge scale, could at most indicate a four as the highest degree of desired knowledge.

Ronald (1982) reported reliability of the desired knowledge scale to be .93. Reliability for the scale formed by subtracting current knowledge from desired knowledge was .95 using coefficient alpha. The mean total commitment score was 17.41 with a range of -47 to +56 and a standard deviation of 11.45. The potential range of scores was -56 to +56.

Statistical analysis procedures used t tests to evaluate the dichotomous variables of gender, computer programming and computer ownership. Gender was not a significant factor in commitment scores (Table XIX). Computer programming experience and computer ownership produced significant differences ($p=.0001$) in faculty members' commitment to learning about computers as an educational tool.

One-way analysis of variance was used to test for differences in commitment among various levels of the following variables: age, the number of years of teaching experience, and number of computer classes taken. Age was a significant factor ($p=.0018$) in commitment to learning about computers (Table XX). The 20 to 29 year old category had the highest mean commitment score among the five age groups. The 30 to 39 year olds had the next highest score. The lowest commitment score was found for the over 60 year old category.

The number of years of teaching was also a significant factor ($p=.0082$) in commitment. Among the six categories of years teaching, the highest degree of commitment was found in the one to three year

TABLE XIX
 ANALYSIS OF COMMITMENT SCORES USING t TESTS FOR GENDER,
 COMPUTER PROGRAMMING, AND COMPUTER OWNERSHIP

Variable	Number	Mean	Standard Deviation	t Value	Probability
<u>Gender</u>					
Female	369	17.52	11.39	0.84	.3989
Male	73	16.27	12.03		
<u>Computer Programming</u>					
Yes	244	14.26	10.34	-6.56	.0001
No	192	21.23	11.82		
<u>Computer Ownership</u>					
Yes	143	13.52	11.40	-4.99	.0001
No	300	19.19	11.05		

TABLE XX
 ONE-WAY ANOVA FOR COMMITMENT SCORES FOR AGE, YEARS OF TEACHING,
 AND NUMBER OF COMPUTER CLASSES

Source	Degrees of Freedom	Sum of Squares	Mean Square	F Value	Probability
<u>Age</u>					
Explained	4	2224.94	556.24	4.36	.0018
Residual	439	56066.70	127.71		
Total	443	58291.65			
<u>Years of Teaching</u>					
Explained	5	1994.19	398.84	3.17	.0082
Residual	435	54792.22	125.96		
Total	440	56786.41			
<u>Number of Computer Classes</u>					
Explained	3	4685.32	1561.77	12.82	.0001
Residual	440	53606.33	121.83		
Total	443	58291.65			

category. The second highest degree of commitment mean score was found in the four to six year category.

The number of computer classes taken showed the highest level of significant difference ($p=.0001$) for the three variables of age, years of teaching, and number of computer classes. Respondents who had taken no computer classes had the highest mean commitment score. Those who had five or more classes had the lowest mean score for commitment. These findings suggest that faculty without computer classes felt a greater need and a greater commitment to learn about computers than those who already had developed a knowledge base about computers.

The following null hypothesis was partially rejected:

H₀3: There were no significant differences in commitment of home economics faculty toward use of computers as an educational tool with regard to age, gender, number of years of teaching experience, number of computer classes attended, ability to create a simple computer program, and ownership of a home computer. Significant differences were found for the following variables: computer programming experience, computer ownership, age, number of years of teaching, and number of computer classes taken.

The questionnaire gave respondents an opportunity to identify areas of interest which had not been included as individual items on the questionnaire. Comments written in as categories in which respondents wished to have additional knowledge were computer-aided design (9), graphics (7), exploring or adapting software (6), management (4), word processing (4), and advising (2). Information needs which were each mentioned once were preschool education, extension, forecasting, and business uses of computers. General comments related to the use of computers in home economics can be found in Appendix D.

Chapter Four presented the information collected through the use of the attitude scale, current and desired knowledge scale, and relevant demographic information. Statistical analysis of the data included t tests and one-way analysis of variance. The findings derived from the data collection for the survey of home economics faculty in higher education will be used as a basis for the conclusions and implications which will be discussed in Chapter Five.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter five will include a summary of the national study of attitudes and commitment of home economics faculty toward computers as an educational tool. The chapter will also include conclusions, implications of the research, and recommendations for further study.

Summary

A brief summary of the study will be outlined in the following section. The purpose and objectives of the study will be reviewed as well as the sample, data collection and analysis, and findings of the study.

The purpose of the research was to assess the attitudes and commitment of home economics faculty toward the use of computers as educational tools. To accomplish this assessment, the researcher compiled data from a national sample of home economics faculty. The national data were analyzed for differences in attitudes, computer literacy, and commitment of home economics faculty as to age, gender, years of teaching experience, number of computer classes taken, computer programming experience, and home computer ownership.

The sample for the study was selected from a combined, computerized, national listing of home economics units who were members of either the Association of Administrators of Home Economics in State Universities

and Land Grant Colleges (AAHE) or the National Council of Administrators of Home Economics (NCAHE). A simple random sample of 41 units (15%) of the national listing of home economics units was selected using a computer generated table of random numbers.

All 41 units were contacted for a listing of home economics faculty with teaching responsibilities within each unit. The 41 individual lists were compiled into a master list of 719 subjects.

The questionnaire used for data collection consisted of three sections: the attitude scale, current and desired knowledge scale, and demographic information. The instrument was pilot tested in one southwestern state with a sample of 75 home economics faculty members who were not part of the national sample.

Questionnaires for the national study were returned from 475 of the 719 subjects in the main sample for a response rate of 66.06 percent. Of the 475 returned a total of 445 questionnaires were complete and met the criteria for inclusion in the study.

The statistical analysis for the study was completed at Oklahoma State University using the 3081D IBM computer. The analysis yielded the total mean score, standard deviation and range for the attitude score, current and desired knowledge scores, and commitment score. A factor analysis was performed for the attitude scale. Analyses using t tests were used for the dichotomous variables of gender, computer programming, and computer ownership. One-way analysis of variance was utilized for the variables of age, years of teaching experience, and number of computer classes. A chi-square analysis was performed to ascertain that the nonrespondents were like the respondents.

The Startzman-Robinson Attitude Scale was used to describe attitudes toward computers of home economics faculty with teaching responsibilities in higher education. The potential range of scores was 0 to 64. The mean total score for home economics faculty was 41.73 with a range of 26 to 64 and a standard deviation of 6.24. A factor analysis of the attitude scale identified four factors. The four factors explained less than 50 percent of the variance and no further analysis of the factors was attempted.

One-way analysis of variance and t tests were performed to determine if significant differences existed for the variables of age, years of teaching, gender, computer programming, computer ownership, and number of computer classes taken. No significant differences in attitudes were found except for the number of computer classes. The greater the number of classes the more positive the attitudes.

The current knowledge scale with a potential range of scores from 0 to 56 was used to evaluate computer literacy. The mean total score for current knowledge was 23.58 with an actual range of 0 to 56 and a standard deviation of 10.39. The variables of gender, computer programming experience, and computer ownership were evaluated using t tests. No significant differences were found for gender. Computer programming and computer ownership each produced a significant difference in current knowledge at the $p=.0001$ level.

One-way analysis of variance tests were conducted for age, number of years of teaching, and number of computer classes taken. No significant differences among age groups were found. The number of years of teaching and the number of computer classes produced significant differences in the current knowledge score used to evaluate computer literacy.

The score to measure commitment was derived by subtracting the current knowledge score from the desired knowledge score. The potential range of scores was -56 to +56. The mean total commitment score was 17.41 with a range of -47 to +56 and a standard deviation of 11.45. Statistical analysis using t tests showed gender was not a significant factor in commitment scores. Significant differences in faculty commitment to learning more about computers were found for computer programming experience and computer ownership. When using one-way analysis of variance for the three variables of age, teaching experience, and number of computer classes, the number of computer classes taken was the factor with the highest level of significance in commitment scores.

Demographic information was collected for the number of years of teaching, age, gender, number of computer classes taken, computer programming, and home computer ownership. Of the five age categories, the largest number of respondents occurred in the 40 to 49 year age group. Female respondents equaled 83.15 percent of the total sample. The largest category of respondents (31.92) had over 15 years of teaching experience.

Almost 90 percent of all respondents had some formal instruction about computers. Of the faculty who had enrolled in computer classes, more than one-fourth had over 20 hours of hands-on experience with computers.

Current computer use categories included research/statistics, administration, classroom management, and classroom instruction. The computer was used least for administrative purposes. The greatest number of faculty used the computer for research and statistics. Other

categories of current computer use identified by respondents were word processing, class preparation, personal use, consulting, software development, advising, child development laboratory, historic costume inventory, and electronic mail.

In the past year few faculty members had participated in regular faculty sessions related to changing the home economics curriculum to introduce students to the use of computers. Over a third of the respondents had never been involved with curriculum changes relating to computers.

More than one-half (55.06%) of the respondents had done some computer programming. Approximately one-third owned their own home computers. Computer programming experience and computer ownership were significant factors in computer literacy scores and commitment to learning more about computers.

Conclusions

Attitudes of home economics faculty toward computers as educational tools were positive. Degree of computer experience and attitude scores of home economics faculty toward computers were significantly related. None of the other variables assessed in the study were significant for the attitude component.

The computer literacy of home economics faculty as measured by their self-evaluation on the current knowledge scale was low. Experience with computers through a greater number of classes, computer programming, or computer ownership was related to higher computer literacy scores.

Commitment to learning more about computers was related to age and years of teaching experience. Younger faculty members with less teaching experience showed a greater commitment to learning about computers. The number of computer classes, however, was the factor producing the highest level of significance in commitment scores.

Computer experience was the factor which impacted on each of the three dependent variables of attitude, computer literacy, and commitment. Gender was not a factor in any of the three areas. The findings of the study lead to the conclusions that additional experience with computers could increase positive attitudes among faculty, increase computer literacy scores, and encourage greater commitment on the part of faculty to learn more about computers.

Implications

The number of computer classes was the single factor which impacted significantly on each of the three dependent variables: attitude, computer literacy, and commitment. As attitudes were positive, but not strongly positive, an overall goal for computer instruction should include the affective domain.

Integrating computer training into the experience of home economics faculty is needed to promote positive attitudes and encourage computer use. Computer training could employ various instructional means such as small group discussions, independent study projects, panel discussions, lectures, and specialized groups to encourage exploration of computer knowledge areas of specific interest to individual learners.

Learning experiences designed for groups at various levels of computer competence are particularly important in view of the wide

variance in current computer knowledge of the respondents. Some faculty need training in areas as basic as how to turn on a computer, while others may wish to form a group to develop software for a specialization within home economics. The fact that the learners are self-directed adults with their own particular specializations within the field of home economics would encourage exploration of individual interests. Knowles (1980) in discussing adult education theory emphasized the importance of experience centered education. Adults need to be actively involved both in identifying their learning needs and in designing their own specific computer subject matter for study.

A higher desired knowledge score than the current knowledge score indicated that faculty wanted more knowledge about computers. Opportunities for learning to develop computer applications for curriculum planning and teaching should be available for home economics faculty.

Development of software specifically directed to the needs of home economics faculty should be encouraged. Respondents repeatedly cited the lack of viable programs as a deterrent to classroom use.

As the computer expertise of home economics faculty expands, increased learning skills could provide for software development within the field. Continued learning skills in relation to computers will help faculty provide the computer experience their students will need to cope with the information age both now and in the future.

Recommendations for Further Study

Additional areas of research were suggested by the study.

1. The attitude scale should be updated and revalidated in response to changes in computer availability and current use in society.

2. A computer literacy scale should be developed as an independent measure of knowledge of computers. It is possible that self-perception and self-evaluation of current knowledge may not be totally accurate.

3. Home economics faculty should be surveyed to determine their needs in the development of software for the various specialties within the field.

4. A survey should be completed to determine learning needs of home economics faculty in relation to microcomputers.

5. A study should investigate the needs of personnel in areas of potential employment for students with relation to personal computers so that relevant computer programs may be developed for student instruction.

6. An investigation is needed to determine the optimal method of integrating computer training into the home economics program for faculty and students at varying levels of experience.

7. The study should be replicated with a stratified random sample of small, medium, and large home economics units to facilitate comparisons among groups. Home economics units which are not members of the Association of Administrators of Home Economics in State Universities and Land Grant Colleges (AAHE) and the National Council of Administrators of Home Economics (NCAHE) should be included.

8. Additional research is needed to develop evaluation measures for software.

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APPENDIXES

APPENDIX A

INSTRUMENT

Please Return to:
 Carol Mehlhoff
 Home Economics West 315
 Oklahoma State University
 Stillwater, OK 74078

STARTSMAN-ROBINSON

SCALE I

Directions: The purpose of the following scale is to describe your perceptions of the computer. There are no right or wrong answers. Please read the following statements carefully. Using the code below, circle the number which best describes your feeling about the statement.

SCALE:	0	1	2	3	4
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. Computers are highly efficient machines.	0	1	2	3	4
2. Computers have created a tremendous breakthrough in the scientific field.	0	1	2	3	4
3. Computers are bad because they take peoples' jobs away.	0	1	2	3	4
4. When errors become numerous in an office, it helps to install a computer.	0	1	2	3	4
5. The modern hospital is badly in need of a revolution by computers.	0	1	2	3	4
6. If it were not for computers, we would probably be ten years behind our present technological pace.	0	1	2	3	4
7. Computers should be used only for menial repetitive tasks which require little thinking.	0	1	2	3	4
8. When a computer is installed in business, some people generally lose their jobs.	0	1	2	3	4
9. I would rather have a computer solve a problem for me than a mathematician.	0	1	2	3	4
10. Computers could help slow the rising rate of hospital costs.	0	1	2	3	4
11. Computers should be used in purely scientific situations only.	0	1	2	3	4
12. The computer can store or "remember" an unlimited amount of information.	0	1	2	3	4
13. I would not mind having the computer determine the jobs I do.	0	1	2	3	4
14. The people who speak out against computers are the ones who know very little about them.	0	1	2	3	4
15. Machines, like computers, contribute to the decaying of morals because they make things too easy.	0	1	2	3	4
16. Computers have contributed to the shortage of employment.	0	1	2	3	4

SCALE II

Directions: The purpose of the second scale is to identify your educational needs with respect to computers. Each statement identifies one area of study which could be included in a computer course for home economics faculty.

Each statement should be rated in two different ways using two sets of numbers. The first set of numbers describes your present level of knowledge with respect to the statement. The second set describes the level of knowledge which you would like to have. (If you have as much knowledge as you would like to have, the same number should be circled in each column.)

Please circle one number under Current Knowledge and one number under Desired Knowledge which best describe your feelings. Use the code below:

SCALE: 0 Very Low 1 Low 2 Moderate 3 High 4 Very High

	Current Knowledge					Desired Knowledge				
	0	1	2	3	4	0	1	2	3	4
1. How a computer functions. (e.g. input, processing, output)	0	1	2	3	4	0	1	2	3	4
2. Privacy considerations in a computerized information system	0	1	2	3	4	0	1	2	3	4
3. Role of the educator in the development of computer applications for higher education	0	1	2	3	4	0	1	2	3	4
4. Ways in which computers can be used to:										
a. save faculty time (e.g. maintain records, average grades, test scoring)	0	1	2	3	4	0	1	2	3	4
b. assist higher education administrators (e.g. budget planning)	0	1	2	3	4	0	1	2	3	4
c. teach students (e.g. simulated decision-making)	0	1	2	3	4	0	1	2	3	4
d. help in curriculum planning (e.g. data bank of instructional objectives, content, methods, resources and evaluation tools)	0	1	2	3	4	0	1	2	3	4
e. aid in statistical analysis and home economics research	0	1	2	3	4	0	1	2	3	4
f. other (specify) _____	0	1	2	3	4	0	1	2	3	4
5. Effect of the computer on:										
a. role of the student	0	1	2	3	4	0	1	2	3	4
b. role of the educator	0	1	2	3	4	0	1	2	3	4
c. the quality of higher education	0	1	2	3	4	0	1	2	3	4
d. the cost of higher education	0	1	2	3	4	0	1	2	3	4
e. other (specify) _____	0	1	2	3	4	0	1	2	3	4
6. How to write an original computer program	0	1	2	3	4	0	1	2	3	4
7. How to use a computer terminal including "hands-on" experience	0	1	2	3	4	0	1	2	3	4
8. Other (please list below)										
_____	0	1	2	3	4	0	1	2	3	4
_____	0	1	2	3	4	0	1	2	3	4

SCALE III

BACKGROUND INFORMATION

Instructions: For items 1-11, please place a check mark (✓) in the appropriate category.

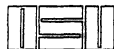
1. How many years have you taught in a four-year institutional program?
 1-3 _____ 4-6 _____ 7-9 _____ 10-12 _____ 13-15 _____ Over 15 _____
2. What is your age?
 20-29 _____ 30-39 _____ 40-49 _____ 50-59 _____ 60+ _____
3. What is your sex? Female _____ Male _____
4. How many classes (lectures, workshops, inservice, continuing education, etc.) have you had about computers?
 None _____ 1-2 _____ 3-4 _____ 5+ _____
 If you checked "None" please skip to question #6, otherwise proceed on to question #5.
5. How many hours of "hands on" experience with a computer did you have as part of the instruction above?
 Less than 1 _____ 1-4 _____ 5-9 _____ 10-19 _____ 20+ (Please specify) _____
6. Are you currently participating in faculty development activities (lectures, demonstrations, short courses, workshops) about the use of computers?
 Yes _____ No _____ If Yes, please describe:
 If No, would you like to be? Yes _____ No _____
7. Approximately how often are you currently using a computer in the following areas?

	Never	Once a Month	Once a Week	Daily
Research/Statistics				
Administration				
Classroom Management (grade books, testing, etc.)				
Classroom Instruction (simulated decision-making, drill and practice, etc.)				
Other (describe)				
8. How often, in the past year, have you participated in faculty (small group) sessions related to changing the home economics curriculum to introduce students to the use of computers?
 Never _____ Once or
Twice _____ Once a
Month _____ Once a
Week _____ Other (Specify) _____
9. Have you ever created a simple program on a computer? Yes _____ No _____
10. Do you presently own a home computer? Yes _____ No _____
11. Do you have access to a computer in:
 a) your office? Yes _____ No _____
 b) your department? Yes _____ No _____
 c) your institution? Yes _____ No _____

Comments: Please use back of page as needed.

APPENDIX B

CORRESPONDENCE WITH ADMINISTRATORS



Oklahoma State University

DEPARTMENT OF CLOTHING, TEXTILES & MERCHANDISING

STILLWATER, OKLAHOMA 74078
HOME ECONOMICS WEST 312
(405) 624-5034

Dear Administrator:

Futurists such as Toffler and Naisbitt are predicting the emergence of the information age with its consequent need for computer literacy. Home economics educators can be leaders in this movement as they continue to develop teaching strategies which benefit students.

We are conducting a study of attitudes of home economics educators in higher education toward computers as an educational tool. Your home economics unit has been selected for inclusion in the study.

So that we can use a complete and current list of faculty, your cooperation is urgently needed. Please send us a list of faculty in your institution with home economics teaching responsibilities.

You may wish to send an existing list or directory which contains names of all faculty and staff. In this case please draw a line through those with no teaching responsibilities.

A postpaid envelope is included for your convenience. We appreciate your cooperation and your prompt reply.

Sincerely,

Carol E. Mehlhoff
Graduate Research Associate

Lynn Sisler
Professor and Head
Clothing, Textiles and Merchandising Department



Oklahoma State University

DEPARTMENT OF CLOTHING, TEXTILES & MERCHANDISING

STILLWATER, OKLAHOMA 74078
HOME ECONOMICS WEST 312
(405) 624-5034

February 5, 1985

Dear Administrator:

We are conducting a study of attitudes of home economics educators toward computers as an educational tool. Your home economics unit has been selected for inclusion in the study.

Recently a letter was sent to you requesting a complete and current list of faculty. Perhaps the original letter was lost or misplaced. Your cooperation is urgently needed. Please send us a list of faculty in your institution with home economics teaching responsibilities.

You may wish to send an existing list or directory which contains names of all faculty and staff. In this case, please draw a line through those with no teaching responsibilities.

A postpaid envelope is included for your convenience. We appreciate your cooperation and your prompt reply. If a listing of your faculty has just recently been mailed to us, we thank you!

Sincerely,

Carol E. Mehlhoff
Graduate Research Associate

Lynn Sisler
Professor and Head
Clothing, Textiles and Merchandising Department

APPENDIX C

CORRESPONDENCE WITH SUBJECTS



Oklahoma State University

DEPARTMENT OF CLOTHING, TEXTILES & MERCHANDISING

STILLWATER, OKLAHOMA 74078
HOME ECONOMICS WEST 312
(405) 624-5034

February 14, 1985

Dear Colleague:

Futurists such as Toffler and Naisbitt are predicting the emergence of the information age with its consequent need for computer literacy. As home economics educators we will need to be leaders in this movement if we are to continue to develop teaching strategies which benefit our students.

The enclosed survey measures attitudes toward computers. There are no right or wrong answers. All replies are held in the strictest confidence. Questionnaires are numbered only so that a reminder can be mailed to those who have not yet returned the questionnaires. The results of the survey will show needs of home economics educators with respect to the use of computers as a learning tool.

Please fill out the survey and return it in the enclosed postpaid envelope. It should take less than ten minutes to complete the survey. Your participation is essential for the successful documentation of home economics educators' attitudes and needs in relation to computers.

Thank you for your participation.

Sincerely,

Carol E. Mehlhoff
Graduate Research Associate

Lynn Sisler, Professor and Head
Clothing, Textiles and Merchandising Dept.

(Orange Postcard)

March 12, 1985

Dear Colleague:

Recently a questionnaire was sent to you regarding attitudes toward and knowledge of computers. Please fill out and return the questionnaire in the postpaid envelope provided. Your participation is essential to assure accuracy in documenting home economics educators' attitudes and needs in relation to computers.

If you have just mailed the questionnaire, your participation is appreciated. Thank you!

Carol E. Mehlhoff
Graduate Research Associate
Oklahoma State University



Oklahoma State University

DEPARTMENT OF CLOTHING, TEXTILES & MERCHANDISING

STILLWATER, OKLAHOMA 74078
HOME ECONOMICS WEST 312
(405) 624-5034

April, 1985

Dear Colleague:

You were recently sent a questionnaire concerning attitudes toward and knowledge of computers. Response to date has been very good. At this point we have not received your response. If you have returned the questionnaire, we appreciate it. If not, a duplicate questionnaire and postpaid envelope are enclosed.

You have been chosen as part of a select group to receive the third mailing of the questionnaire. It is vitally important that we receive your response.

Thank you for your participation.

Sincerely,

Carol E. Mehlhoff
Graduate Research Associate

Lynn Sisler, Professor and
Head of Department

Enc.

APPENDIX D
COMMENTS FROM RESPONDENTS

Comments

Don't Use:

I use computerized information very often, but I don't use the computer itself. The computers in our department are used so much of the time that a faculty member is limited in usage time. At this point I think statistical knowledge is more important for me than computer knowledge.

My own research interests are not adapted to computers. If I need work done on a computer or word processor, I get it done by someone who is trained for that - I have preferable ways to use my own time and skills - and money. I could change the oil in my car or do other tasks if I wanted. I feel the same about computers. As a hobby, fine, or for other disciplines.

I do not know enough about computers to respond adequately.

I'm in a unique position - will retire next year, so really not needing to learn use of computer for my present work role.

I don't intend or expect that you should use this questionnaire. I have as yet, no need for any "computer" needs in my teaching.

Plan To Use:

Plan to get an apple at home in the next year or two.

Our family studies center has received computer hardware and some software through an institutional grant from the IBM Corporation. We are moving rapidly to incorporate this new technology and advance the use of microcomputers in research, teaching and service.

Our department is currently negotiating to obtain enough terminals and a midi computer to use for classroom instruction, simulation, etc. When that happens, I will be assisting in teaching the course in the area of fashion merchandising.

I teach design. I would be interested in a computer which would create designs as I tell it or draw it, make repeats of that design (as a repeated printed fabric design) change colors for certain parts as I desired, and print these for a record. I would use a computer in developing fabric, rug and wallhanging designs. It would be a quick way to develop and record ideas.

I feel the need and the pressure to become involved with computers. However, I find it very easy to not find the time to learn. I am also dealing with the pros and cons of using computers in a pre-school setting. My apologies for this late response.

Wrote grant with another faculty member to incorporate in teaching food science classes. Funded for purchasing of equipment and software.

Very interested in learning how to use computers in simulated decision-making.

George Fox College has a grant and interest free loan program so faculty can purchase home computers. My husband and I have just purchased an IBM-pc with printer. We are finding it very helpful as we learn more about it almost daily. What fun!!

One for the department on order.

Limited Use:

I can see computer use being very helpful in nutrition, design, merchandising and consumer economics. As a professor in family, I find its use very limited in teaching the dynamics of human interaction.

The computer is a valuable tool, but lack of funding has hampered the number available in our department. I have had opportunity outside of the area to become acquainted with them; and have had students and in-service groups become familiar with them. Hands-on experience was provided by developing short programs. I have attended a variety of workshops, but most of them did not provide hands-on experience.

I teach in a professionally oriented graphics design program and focus on historical research. Computers will be utilized in a part of our program, but probably not in my work.

I'm learning to use a home computer and trust I'll be more comfortable as I develop skills.

Minimal access to microcomputers is a real problem to faculty who are interested in developing expertise in this area. Budgets simply do not allow this "luxury" which is actually a necessity to be able to prepare students to compete in the marketplace.

I use a weaving program.

As head teacher in lab school I've had little need to use computers. I only teach student teaching and one course per year. I did use the computer a lot doing my M.S. thesis 4-6 years ago.

Limited access available to department, but no software and limited hardware capabilities of micro. No budget available to me currently for mainframe access.

Used Often:

I enjoy using the TRS 80 computer and Plato computer at our school for teaching and for my personal research.

I have had a Xerox 820 in my office for two years. Since I have no secretary, I use it constantly. I believe that every faculty member should have access to one.

I use the computer daily in the child development lab with three and four year old students.

We use the computer extensively in elementary nutrition classes. I use my Apple IIe for word processing a great deal, for creating designs for textiles, and teaching my child.

Use computer daily, do a great deal of self-learning, involved in a certificate program for computers in education, team teach a basic computer literacy course for H.E. majors.

I have a home computer in my home office. My spouse is a computer science professor. We have a separate telephone line and a modem for communicating with the university computer. We also do outside consulting. For consulting services we pay for a separate computer timeshare company. We use our modem and connect directly into the service.

I have my own computer in each of my two offices (teaching office and research office) and one at home. My research productivity has increased 300% after our computerization. I can't even bear the thought of writing, computing grades or doing graphics by hand.

I have developed a CAI program in nutrition along with a program. Devoted 1000+ hours to this and using it with students.

At school: Apple, HP, DEC, M--; Home: AT&T, Epson.

I have been using my Apple II+ at home for more than three years. I've used it to do statistical analysis for graduate courses, word processing, lecture writing, test writing, etc., but not in formal learning situations did I learn this.

Other:

Would like a copy of your results. Thanks.

I have not had formal instruction but own a computer so self-instructed.

1. Rather than how computers function only, faculty and students need to know how computers differ from each other and micros vs. minis vs. mainframes vs. networks.

2. Criteria for purchasing hardware and software is badly needed for faculty for both within the field and general applications.

3. Not just role of student and educator but how computers change the role of the professional in various fields of Home Economics and how coursework requirements need to keep pace.

I am an owner of computerland in Tallahassee, Fl.

The whole use of computers goes much faster in education, as elsewhere, when money is put in. My institution has little money for anything.

I am 66 years old, have taught for 42 years. I understand and appreciate the usefulness of the computer but have no need for one in my home and hope to retire soon so do not plan to become very involved with computers at work. However, I believe computers are very important in the education process and recommend that all young people learn about and how to use the computer.

Please note that english is as important as any computer language.

I am sure that computers will be a valuable design tool in the future.

We wrote a college teaching monograph published by Univ. of ND (1984) about development of computer use for our dept.

Good luck!

The need for computers does not need to be demonstrated to the best of my knowledge--at this day and age we don't have money for anything else--but we do have money for computers.

No time right now. I'm not sure what you want to prove but you have ambiguous, extremely poorly worded questions. Ie, unlimited storage on computer--need to qualify what kind of computer you are discussing--mainframe or microprocessor? Ie, why not participating in classes--unavailable? No time? I guess I am getting tired of several questionnaires so someone can get a M.S.?

I believe this questionnaire has not addressed the issues related to off campus faculty (like those in Cooperative Extension Service) or other related non-credit applications. It seems college--rather than home economics--to me.

We are currently conducting research with the computer and children aged 3-5 years. Our review of software in that particular area as well as some other areas of H.E. (ex, Clothing and Textiles) has revealed a limited amount of software available. We are interested in your results and would like to hear from you again.

VITA²

Carol Evangeline Mehlhoff

Candidate for the Degree of

Doctor of Philosophy

Thesis: KNOWLEDGE, COMMITMENT, AND ATTITUDES OF HOME ECONOMICS
FACULTY TOWARD THE USE OF COMPUTERS

Major Field: Home Economics-Clothing, Textiles and Merchandising

Biographical:

Personal Data: Born in Bismarck, North Dakota, November 19, 1943,
the daughter of Mr. and Mrs. John F. Mehlhoff.

Education: Graduated from Tuttle High School, Tuttle, North
Dakota, in May, 1961; Junior Year Abroad Student at Beirut
College, Beirut, Lebanon, 1963-64; received Bachelor of
Science degree in Home Economics with a major in Design from
North Dakota State University in 1965; received Master of
Science degree in Textiles and Clothing from North Dakota
State University in 1983; enrolled in doctoral program at
Oklahoma State University, 1983; completed requirements for
the Doctor of Philosophy degree at Oklahoma State University
in July, 1985.

Professional Experience: Retail Sales, 1964-65; Design Consultant,
1966-67; Retail Management, 1968-81; Graduate Research
assignments, 1981-85.

Professional Organizations: American Home Economics Association,
Oklahoma Home Economics Association, Association of College
Professors of Textiles and Clothing, Phi Upsilon Omicron,
Omicron Nu.