VARIABLES RELATED TO THE INTENT TO PARTICIPATE IN CONTINUING PROFESSIONAL EDUCATION

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A DISSERTATION

Submitted to

Michigan State University

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

Department of Counseling, Educational Psychology and

Special Education

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ABSTRACT

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The purpose of this study was to examine the phenomenon of participation in continuing professional education by studying a population of educational technologists who were members of the Association for Educational Communications and Technology. The study had three primary goals: (1) to examine correlations between demographic and personal characteristics and the scores from the scales used in the study, (2) to determine if Fishbein's Expectancy-Value model was an effective means of determining whether participants would take part in continuing professional education and (3) to discover the personal, social and attitudinal characteristics that separate participants from nonparticipants in continuing professional education.

The study population consisted of members of the Association for Education Communications and Technology listed in the 1981-1982 membership directory. A copy of the four scales, Attitude, Subjective Social Norm, Subjective Personal Norm and Anticipated Circumstances was mailed to a sample of 309 members of the population along with a letter of instruction. Each scale was designed to measure a different aspect of a professionals belief system in order to determine the intent to participate in continuing professional education.

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The results of the study are described below:

- 1. As age, the amount of time since the last degree was received, the number of years in the present employment role and salary increase, the scores on the Attitude Scale decrease.
- 2. As the level of education and amount of time spent as a student increase, the scores on the Subjective Social Norm Scale increase.
- 3. As the length of time since the last degree was received and the amount of salary increases, the scores on the Subjective Personal Norm Scale decrease.
- 4. As the amount of time spent in curriculum or instructional development increases, the scores on the Anticipated Circumstances Scale increase.
- 5. Age, length of time since the last degree was received, length of time spent in the present employment role and salary in the past calendar year were negatively correlated with a respondents intent to participate in continuing professional education.
- 6. The amount of time spent in research and the amount of time spent as a student were correlated with intent to participate in continuing professional education.
- 7. The proportion of variance explained by the expectancy-value scales was 23% for the intent to participate in continuing professional education within the next year and 17% for the intent to participate within the next three years.
- 8. Of the 101 participants classified in the discriminant function analysis, 96 or 95% were correctly classified as participants. Of the 37 nonparticipants, only 9 or 24% were correctly classified as nonparticipants based upon their discriminant score.

ACKNOWLEDGEMENTS

Anyone who has undertaken a project such as a dissertation, especially while working, knows the strength that is given by a spouse who supports, prods and encourages when the flesh gets weak. Special thanks go to my wife, Evelyn, who was the support I needed to get this task done.

Special thanks also go to my children, Erica and Renee, who will no longer have to ask when I will be done with my dissertation. Their concern and interest has kept my head out of the clouds.

Special thanks also go to those professionals who have helped me complete the dissertation.

Dr. Castelle Gentry has been a valued counselor as I prepared this research study. When I needed help on how to proceed, or what changes needed to be made, he was willing to respond.

Dr. Larry Sarbaugh helped me in the preliminary stages of the study. When I was preparing the initial questionnaires, his critique helped me create a better product.

The members of my committee, Dr. Norman Bell, Dr. Raywin Huang and Dr. Bruce Miles have helped make this report possible. I appreciate their help in redefining the study after an early, false start.

Final thanks go to those who took the extra time to complete the survey instruments. Without their effort the study would not have been possible.

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CHAPTER ONE: STATEMENT OF THE PROBLEM

INTRODUCTION

This chapter describes the thesis problem and its significance to the field of education and specifically to educational system development. The need for the research will be analyzed along with the theoretical and conceptual foundations of the study. The limitations of the study are also described.

PROBLEM STATEMENT

As our society moves toward increased employment of professionals (Schein, 1972), an interest in how to expand and improve the skills of professionals has developed. As Queen (1979) said after surveying the professions registered with the State of Pennsylvania:

Virtually every profession we've investigated has indicated support of some kind of continuing education for it's practitioners. Whether voluntary or mandatory, continuing education is viewed as a useful means of accomplishing a number of professional goals. (p.24)

The desire for continuing professional education can be seen in surveys of professionals in which the extent of participation in continuing education is examined. In a study by Castle and Storey (1968), physicians spent, on an average, 32 hours a month in continuing education of a total working time of 212 hours. In another study by Brody and Stokes (1970), doctors were observed to spend an average of 14 minutes each day in some form of continuing education out of a total of 450 minutes. In both of these cases,

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the continuing education experiences were informal in nature, usually, consisting of consultation with other doctors, reading journals, group discussion or patient rounds. However, many other studies use a definition of continuing professional education which is more formal in nature. These studies used a definition similar to the one used in the present study, which is:

Education opportunities available to a professional to be used to update and supplement existing skills and knowledge. Participation requires that an external source (such as an organization or another qualified individual) monitor the learning of the professional in order to validate the experience. (Waldon, 1982)

Harnisch (1981) studied veterinarians for their level of participation and found that 84% had participated in some form of continuing education within the last year. However, 11% had not participated in any form of continuing education within the 3 years covered in the study. In a study of judges, Catlin (1981) found that 76% of the respondents spent 7 or more days in continuing education over a three-year period. Finally, Molenda (1977) examined the continuing education needs of educational technologists by asking them to indicate their interest in 15 topics that were expressed needs of the population. He found that interest ranged from a low of 50% to a high of 86% depending on the topic. The number expressing no interest in the topics varied from 14% to 50%. One significant finding of the study was that those with doctoral degrees and members in the higher income brackets tended to express lower interest in continuing education.

Even though a majority of professionals participate or express interest in some form of continuing professional education, we know little about what factors contribute to an individual's intent to participate. A variety of studies have been completed that examined stated reasons for participation. (Catlin, 1981; Cervero, 1980; Harnisch, 1981) Other studies

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have examined factors that inhibit involvement in continuing education. (Boshier, 1973; Carp, Peterson, & Roelfs, 1973; Castle & Storey, 1968; Dao, 1975; King, 1975) Still other studies have looked for orientations toward learning. (Burgess, 1971; Houle, 1961; Sheffield, 1964)

The weakness of these studies has been that participation has been viewed as one-dimensional. Little consideration has been given to the variety of personal, social and environmental influences described in the literature that may <u>combine</u> to affect the intent to participate in continuing professional education. The uni-dimensional character of these studies stands in contrast to the work of Boshier (1973) and Southern (1980) who suggested that participation involves a mixture of personal, social and environmental influences. These influences include personal motivation to participate, attitudes toward learning, beliefs about the efficacy of further education, personal and group norms in addition to environmental conditions which may enhance or impede participation. Since these variables have not been studied together before, this study will examine the relative contribution of personal, social and environmental influences on the intent to participate in continuing professional education.

SIGNIFICANCE OF THE PROPOSED RESEARCH

The research studies cited in the previous section suggest that participation in continuing professional education is valued by a majority of professionals. The problem remains that beyond knowledge of a few variables related to participation, we have little idea of how important each variable is and how they work together to affect participation. The result is that we do not know why individuals participate in one event and fail to become involved in another. We lack knowledge whether participation

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occurs because of the topic covered, the mode of delivery, values favoring participation or personal and reference group norms which may impinge on the decision to participate. The net effect is that we are unable to determine what factors work together to encourage professional interest in continuing education. The present study will attempt to alleviate this weakness by examining personal, social and environmental influences for their contribution to participation in continuing professional education.

Closely related to the issue of participation is the problem of nonparticipation. In the studies mentioned in the previous section, nonparticipants constituted approximately 10-20% of the professional populations sampled. Although this percentage is small compared to those who participate, it is incompatible with the needs of the profession as well as society, especially where professional skills are highly critical in nature, such as a those of a physician, or where the effects of skill deficiences can have a impact on how people learn, such as with instructional technologists. Thus some means must be sought to determine the variety of reasons why a minority of professionals fail to participate in continuing professional education so that strategies can be developed to reduce barriers to involvement. The present research study will attempt, in part, to alleviate this weakness by examining nonparticipants as well as participants to determine if there are variables that distinguish the participation level of the two groups. One of the expected outcomes of the research should be better understanding of nonparticipants so that strategies can be developed to improve participation.

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LITERATURE SUPPORT FOR RESEARCH NEED

Research related to participation in adult education has evolved along a variety of lines. A number of studies have examined participation in terms of the personal and demographic characteristics of participants. (Anderson & Darkenwald, 1979; Carp, Peterson & Roelfs, 1973; National Center for Education Statistics, 1978) Others have attempted to distinguish between participants and nonparticipants in order to determine what encouraged or discouraged participation. (Boshier, 1973; Castle & Storey, 1968; King, 1978) Others have attempted to examine motivations expressed or implied by those taking part in adult education activities. (Burgess, 1971; Houle, 1961; Sheffield, 1964) Still others have examined the stated reasons for participation to determine how the reasons may apply differentially based upon demographic and personal characteristics (Catlin, 1981; Cervero, 1981; Harnisch, 1981).

However, the problem remains that these studies have been one dimensional in their analyses of variables related to participation when the work of Boshier (1973) and Southern (1980) suggests that participation involves a variety of personal, social and environmental influences that may affect participation. In order to solve the difficulty of discerning how these variables are related to participation, Grotelueschen (1977) suggested that Fishbein's expectancy-value model (1975) could be instrumental in drawing the issue together. Using Fishbein's expectancy-value model, Grotelueschen proposed that participation can be understood by examining the relationship between behavior, intent, attitude and belief toward participation in continuing professional education.

The basis for this model is Fishbein's idea that behavior is volitional, and therefore, should be predictable from a person's intent to perform a

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given behavior. A person's intent, in turn, is a function of two factors: (1) the individual's attitude towards performing the behavior (measured in the attitude scale) and (2) the individual's personal beliefs and those about what others think he or she should do (which are measured by the subjective social and personal norm scales).

Using these components, King (1975) and Perry, Gillespie & Lotz (1976) found that the model does effectively account for behavior through measurement of behavioral intent. Their findings suggested that Fishbein's model does incorporate the variety of variables related to behavioral intent. Thus Fishbein's model should be useful in examining the variables related to participation in continuing professional education by measuring the respondents' intent to participate.

Using the model developed by Fishbein, Southern (1980) completed a study of participants and nonparticipants in graduate education courses. Using a population of 308 educators, she surveyed 200 persons who were enrolled in graduate education courses at Texas Womens University. In addition, she completed a survey among 108 educators from a local school district who were not participating in any educational activities. The results suggested that behavior toward participation in continuing professional education can be estimated by a study of an individual's intent to In addition a variety of characteristics were found to participate. distinguish between participants and nonparticipants including experience, job status, age and graduate hours taken. The Southern study is the only research that has been conducted with a professional education population using Fishbein's model. For this reason, the study is very important for the methodological approach used during the study. In the following section the Southern study will be examined for any weaknesses which may be overcome in the present study.

The first apparent weakness of the Southern study was that the two groups examined were selected on the basis of availability, not random selection. Because participants and nonparticipants were used without consideration for how the variables examined in the study were distributed among the population, the results were not generalizable to the population from which the samples were drawn.

A second apparent shortcoming of the study was the unstated definition of nonparticipation. In Southern's study, non-participation was not necessarily an indication of any pattern of nonparticipation over time, as much as it was an example of either disinterest or inability to participate at one point in time. If Southern had selected those who had not participated over a span of time, such as three years, the case for nonparticipation would have been stronger.

Finally, the study was limited to demographic variables and the components of Fishbein's model. The strength of the outcome may have been improved by including not only the components of the model but also <u>anticipated circumstances</u> which Engel, Blackwell and Kollat (1978) have suggested may impinge on the intent to participate.

The research described in this section along with the variables that were examined in each study are reviewed in Table 1.1. By using Fishbein's expectancy-value model, it is felt that the demographic characteristics, personal learning orientation and anticipated circumstances that may affect participation will be examined comprehensively so that we will have a more complete understanding of which factors contribute to participation in continuing professional education.

Table 1.1	
Comparison of Research Conducted or	1
Participation in Continuing Education	m

Research Studies	Personal/ Demographic Variables	Encouraged/ Discouraged Participation Variables	Personal Notivation Variables	Reasons for Participation Variables	Personal, Social, Environment Variables
Andersen & Darkenwald, 1978	XXX				
Boshier, 1973		***		·	EXX
Burgess , 1971					
Carp, Petersen & Boelfs,1973	EXX				
Castle & Storey 1968	•	EX X			
Catlin, 1981				XXX	
Cervero, 1981				EEX	
Houle, 1961			TII		
Barnisch, 1981				XXX	
Eing, 1978		XXX			
National Center Education Stati 1978	for stics,	EXX			
Sheffield, 1964			222		
Southern, 1980					III

SIGNIFICANCE TO THE PRESENT STUDY

The present study will improve on previous studies by examining a variety of variables related to participation, including attitudes toward participation, social and personal beliefs that may affect the choice to participate and anticipated circumstances which can interfere with the intent to participate.

In addition, the study will use a random sample of the population. Using the random sample, individuals will be located who have failed to participate in continuing professional education over the last three years, since this will be an indication of a pattern of noninvolvement.

These changes should increase our knowledge of variables that affect participation and how they work together. With this information future research can examine which variables are most likely to indicate participation by members of a specific audience. Message strategies can then be devised to meet the needs of such an audience so participation could increase.

RESEARCH QUESTIONS

The research questions which will be examined in this study are the following:

- 1. What are the personal and professional characteristics whic correlate with a professionals intent to participate in continuing professional education?
- 2. How effective is the modified Fishbein expectancy-value model in predicting a professionals intent to participate in continuing professional education?

3. What are the personal and professional variables which distinguish the professional who participates in continuing professional education from the one who does not participate?

THEORETICAL AND CONCEPTUAL FOUNDATIONS

Research on participation in adult and continuing professional education has utilized two basic approaches, descriptive and explanatory. The first approach has involved descriptive studies which elicit the personal and demographic characteristics of participants and nonparticipants. The studies (Anderson & Darkenwald, 1979; Carp, Peterson and Roelfs, 1973; National Center for Education Statistics, 1978) have improved our knowledge of <u>who</u> the people are that participate in adult education activities, but the studies have lacked the capability to explain <u>why</u> these people participate. For this reason studies have been conducted to understand the reasons for participation.

The second approach to the study of participation in adult education activities has been more explanatory. The primary focus has been one of answering the question "what are the reasons for participation or nonparticipation in adult and continuing education activities"? From this basic question a variety of theoretical perspectives have been used to guide the studies. These models include Maslow's (1954) hierarchy of needs model, the developmental stages work of Erikson (1950) and Havighurst (1953), Houle's (1961) learning orientations model and Grotelueschen's (1977) intentionality model. It is the latter model of intentionality that will guide the present study.

The primary reason for selecting Grotelueschen's intentionality model is that it alone of all the models is concerned with predicting behavior. While

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the descriptions of stated or unstated reasons for participation suggested by theorists such as Maslow, Erikson, Havighurst and Houle are valuable in understanding an individual's motives for learning, they are a necessary but insufficient answer to the problem of how to predict if a person will actually participate. The model suggested by Grotelueschen is an advancement over previous theories since it attempts to predict participation. For this reason, the intentionality model was selected to guide this study.

Basing his model of intentionality on Fishbein's expectancy-value model (1975), Grotelueschen proposed that participation in continuing professional education can be explained by a study of an individual's intent to participate in continuing professional education. The rationale for Grotelueschen's model is based upon a person's <u>intent</u> to perform a specific behavior, rather than the person's attitude toward the behavior. The intent is based upon the idea that a person develops beliefs about an act, in this case participation in continuing professional education, as a result of direct experience, inference and mediated information. Based upon these beliefs, an individual develops a favorable or unfavorable attitude toward the act. Thus a person's intent to perform a specific behavior is based upon the person's belief that an object has certain attributes and his evaluation of those attributes.

The model that has been proposed to determine intent is composed of four elements: intent, attitude toward the act, subjective social norm and subjective personal norm. They are combined into the following formula:

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"A" or <u>attitude</u> is estimated by multiplying the person's evaluation of each of the consequences of an experience by the value placed on the subjective probability that the experience will lead to that consequence.

"SSN" or <u>subjective social norm</u> is estimated by multiplying the individual's perceptions of each of the expectations of relevant referent persons by the motivational value of those beliefs. "SPN" or <u>subjective personal norm</u> is estimated by multiplying each of the individual's personal beliefs about whether he or she should behave in a certain way and the motivation to comply with those beliefs. "T" or <u>intent</u> is approximately equal to behavior, and intent is the total of the summated products for attitude, subjective social norm and subjective personal norm.

In combining the components of the intentionality model, Grotelueschen felt that participation could be examined to answer the question of why professionals participate in continuing professional education. The present study will pursue this question through the use of the intentionality model adapted by Grotelueschen using Fishbein's expectancy-value model.

LIMITATIONS OF THE STUDY

One of the primary reasons for the use of random selection procedures is to increase the generalizability of the findings from a given study. Since this study will use random sampling for members of the Association for Educational Communications and Technology, the results will be generalizable to the members who participated in the study.

Another limitation of the study is the definition of continuing professional education. The definition used in this study emphasizes formal learning, while much of what a professional learns may be informal in nature.

Finally, any survey research faces the difficulty of nonrespondents and how they might have differed from those who did respond. All attempts were made to encourage members to respond, but it may be that those

professionals who did not respond to the survey would have had different perspectives from those who did respond.

CHAPTER SUMMARY

This chapter described the problem of participation in continuing professional education and the significance of the research in understanding the problem. The research need, research questions, theoretical and conceptual foundations and limitations were also explained.

CHAPTER 2: REVIEW OF THE LITERATURE

INTRODUCTION

In this chapter the literature related to adult learning and continuing professional education, the need for continuing professional education and the research related to motivational and demographic characteristics of participants will be examined. Also examined will be the research related to participant's perception of the expectations of others as it affects participation in continuing professional education as well as reasons for nonparticipation. Finally, the literature describing work on the relationship between attitude and behavior will be examined for its impact on Fishbein's expectancy-value theory which is the model used in this study.

ADULT LEARNING AND CONTINUING PROFESSIONAL EDUCATION

The role of education in altering the thoughts and practices of people is as old as writing. In the Old Testament, people were admonished to teach their children properly so that they would grow up to be respected members of society. Plato and Aristotle encouraged individuals to explore new territories of knowledge throughout their lives. Commenius, in the 17th century, suggested that education could be best served through the development of individuals. In more recent years, Dewey suggested that education and learning are lifelong processes. (1916) However, only in recent years have these perspectives on education resulted in formal definitions of how learning should take place throughout a person's lifetime. In this section, the literature on recent conceptualizations of adult learning are examined for their relationships to continuing professional education.

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The term <u>adult education</u> has been defined in a variety of ways. Some definitions limit adult education to courses taken by adults in formal settings, sponsored by a recognized agency, with only part-time attendence allowed. (National Center for Education Statistics, 1978) Other definitions include learning options which are more informal in nature or recognize the responsibility of the learner to pursue his or her own educational goals in whatever form desired. (Delker, 1974) However, all these definitions are based on three basic assumptions: (1) the participants are adults who are beyond the normal school-leaving age, (2) the needs of adults are different from those of school-age children and (3) adults bring to the learning situation a variety of life experiences which are to be used as a resource in any learning situation. (Dave, 1976)

As a result of adult education's emphasis on formal education patterns and a desire on the part of educators to examine the implications of what was being learned about adult development, interest developed in expanding the definition of adult education toward the concept of lifelong learning. Although there are a plethora of definitions of lifelong learning, the following by Dave (1976) exemplifies the essential elements of lifelong learning that distinguish it from adult education:

Lifelong learning seeks to view education in its totality. It covers formal, nonformal and informal patterns of education, and attempts to integrate and articulate all structures and stages of education along with the vertical (temporal) and horizontal (spatial) dimensions. It is also characterized by flexibility in time, place, content and techniques of learning and hence calls for self-directed learning, sharing of one's enlightenment with others, and adopting varied learning styles and strategies. (p.35-36)

This definition points out a number of similarities and differences between adult education and lifelong learning. These include:

1. Adult education centers on learning at only one stage in life, i.e. adulthood, while lifelong learning views education as a series of

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interconnected experiences which a person completes during a lifetime.

- 2. Lifelong learning uses a wide variety of formal and informal environments, while adult education emphasizes formal education environments.
- 3. Lifelong learning emphasizes that education should be coordinated with other components of society in which learning occurs (horizontal integration) and that learning should occur as needed throughout a person's lifetime (vertical integration). Adult education inclines to isolated educational activities that are not integrated with earlier experiences.
- 4. Lifelong learning utilizes time, content, techniques and place more flexibly than adult education.
- 5. Adult and lifelong learning advocates stress the importance of self-directed learning, but because of the greater flexibility in lifelong learning, the individual will require a greater degree of initiative in resolving his or her educational needs.

These differences between adult and lifelong education have yet to be fully born out in educational practice. Much that might be called adult education has elements of lifelong learning, while the reverse is also true. However, efforts have been made to apply the theory of lifelong learning to many aspects of education.

Just as adult education has undergone a basic revision in its underlying structure, continuing professional education has begun to utilize new models in understanding the role of continuing education in professional development. Houle (1980) suggested that in the past we have utilized a model that emphasized an initial period of professional preparation accompanied by occasional periods of retraining (Figure 2.1). The model corresponds closely to those used in adult education. Houle suggests that a
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new model is emerging based upon the ideas of lifelong learning where a person's professional training will not be based upon a massive initial experience and limited followup periods but will consist of a number of interconnected learning experiences which emerge as need arises in a person's professional life. (Figure 2.2) This model is an attempt to reorient the professional to the need for continual learning to update, renew and create skills.

Another educator who has attempted to change existing concepts of continuing professional education is Grotelueschen (1980) who has suggested that we must move away from research conducted with adult education populations to development of theories and research methodologies which reflect continuing professional education. His belief is based upon basic differences he perceives between adult and continuing professional education populations which include:

- 1. Professional participants are a more homogeneous group than adult education participants primarily because of common professional preparation.
- 2. The individual professional has less flexibility in choosing to participate in educational activities because of mandated requirements or desire to serve professional clients adequately.
- 3. The professional participant not only benefits personally from the training but also serves to benefit a secondary source, the client. In adult education the only need is for the individual to be served through the educational experience.

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Figure 2.2

An Emerging Model of Professional Education

As a result of these developments in understanding the special needs of professionals, research has been conducted to determine the unique characteristics of professionals which may encourage them to participate in continuing professional education. This study is one attempt to add to this body of knowledge.

In summary, progress in adult education has led to interest in lifelong learning and the special needs of professionals for further education. New models have been suggested that indicate how the need for continuing professional education is complementary, but distinct from those of adult education.

THE NEED FOR CONTINUING PROFESSIONAL EDUCATION

Lindsay et al., (1974) suggested that three primary forces have converged in recent years to spark interest in continuing professional education. First, members of society have become increasingly critical of the quality of service rendered by professionals. Second, professional organizations have been under increasing pressure to either monitor the competence of members of the profession or lose control over the quality assurance process. Third, individual professionals have become more aware that lifelong learning is a component of being a professional. All of these pressures have combined to increase interest in continuing professional education.

The accountability movement, combined with an increasing number of groups looking for professional recognition, has led to demands that a profession serve the public more competently. As Collens (1979) suggested, society is concerned that professions:

...Render service that meets the highest standards of competence and integrity and act with special concern for the public interest.(p.236)

Collens states that this demand has arisen from the increased complexity and regulation of our society. In addition, the consumer of professional services has broader avenues for registering concern about the quality of service.

Because of public pressure many states have exerted pressure on professional organizations to monitor the competence of members of the profession. Bratton (1980) suggested that three methods are used to measure the ability of a professional to maintain competence: (1) mandated formal continuing education which requires a preset number of hours of study over a specified span of time, (2) periodic review of competence based upon examination, performance evaluation or other agreed upon measures and (3) self-guided study, which relies on the individual's sense of professionalism to improve competence.

Once a professional organization approves one of these strategies Bratton indicates that the association is faced with the problem of <u>how</u> competencies will be brought up to date. A variety of educational alternatives become necessary to encourage the professional to upgrade knowledge and skills. Thus the profession takes on the role of purveyor of education, either formally or informally.

Ultimately, the need for continuing professional education falls on the individual, whether the reason is mandated continuing education, the desire to maintain competence as a professional or an individual's awareness of the shifting knowledge base underlying the profession. One attempt to define the pace at which this knowledge changes has been suggested by Dubin (1974) when he described the idea of "half-life". Half-life is defined as:

The period of time after completion of formal education when approximately half of what the professional has learned is no longer applicable. (p.152)

Based on an analysis of the increasing number of abstracts published in <u>Psychological Abstracts</u> from 1961 to 1970, as well as personal interviews, Dubin suggested that the half-life of a psychologist averaged about 10 to 12 years. Lukasiewicz (1971) stated that the half-life of an engineering student in 1940 was approximately 12 years; by 1970 the half-life had shrunk to five years. Rosenow (1971) of the American College of Physicians estimated the half-life of a medical internist's knowledge to be five years.

The pace at which knowledge changes and what Knox (1979) has suggested are personal and job-related demands to improve performance, place pressure on the professional to become involved in some form of educational activity. Thus the need for continuing professional education becomes focused because of personal, professional and societal influences.

Societal pressures, professional growth and personal interest have been suggested as forces pushing for professional renewal. In addition, the pace at which knowledge expands has created the need for further professional education. Together, these forces supply the impetus for further continuing professional education.

MOTIVATIONAL CHARACTERISTICS OF PARTICIPANTS

A variety of approaches have been used to ascertain the motivations for participating in adult and continuing professional education. The models of Maslow (1954), Erikson (1950) Havighurst (1953), Houle (1961) and Boshier (1977) have occupied the prominent roles in the examination of motives for participation in continuing education. It is Houle's (1961)

"learning orientations" study that has resulted in the largest body of research related to adult and continuing professional education. These studies are the basis for much of the research that will be reviewed in this section.

In his study, Houle interviewed 22 participants taking part in adult continuing education activities and found that three orientations typified the majority of those questioned. The individuals consisted of those who were <u>goal-oriented</u>, who saw education as a means to attain personal goals; <u>activity- oriented</u>, who took part in order to be involved in experiences; and learning- oriented, who sought knowledge for its own sake.

Using Houle's typology, Sheffield (1964) surveyed 453 participants who attended 20 different adult conferences. He found five orientations including: (1) the learning orientation, or seeking of knowledge for it's own sake; (2) the desire for activity orientation, in which the participant finds social or interpersonal meaning from participation; (3) the personal goal orientation, which includes those who are pursuing personal goals; (4) the societal goal orientation, based on the desire to accomplish social or community goals through participation; and (5) the introspective need orientation, which is based on the desire to use course content to introspectively examine personal goals.

Burgess (1971) collected data from 1,046 adult education participants who were asked to rate how influential each of 70 previously derived reasons were in their decision to participate in an adult education activity. Factor analysis was used to derive seven clusters or orientations toward participation. The seven factors included the desire to know, the desire to reach a personal goal, the desire to reach a social goal, the desire to reach a religous goal, the desire to take part in social activity, the desire to escape and the desire to meet formal requirements. Two factors which

were hypothesized but did not emerge were desire to comply with general social pressure and the desire to study alone.

Morstain and Smart (1974) completed a study with a group of 645 adults enrolled for part-time coursework at a local college. Six factors emerged from the analysis: (1) social relationships, (2) external expectations, (3) social welfare, (4) professional advancement, (5) escape/stimulation and (6) cognitive interest. In analyzing the data, they found that more importance was placed on factors for professional advancement, cognitive interest and social welfare while less importance was attached to external expectations, social relations and escape/stimulation dimensions of the scale.

The learning orientations work of Houle (1961), Sheffield (1964), Burgess (1971) and Morstain and Smart (1974) have analyzed the variety of reasons expressed by adult education participants. The studies have shown how adult education participants may have a wide variety of reasons for participation, including such needs as a need to seek more knowledge in a new field or the need to socialize with people. The reasons for participation vary based upon the specific needs of the individual.

DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS

The study of participants "learning orientations" was paralleled by an interest in the demographic characteristics of those who take part in adult and continuing professional education. In the following section, the research on demographic characteristics related to the variables in this study are examined including age, level of formal education completed, length of time since the last degree was received, nature of employment responsibilities, length of experience in present employment role, salary in past calendar year and amount of participation in continuing education in recent years.

AGE OF PARTICIPANTS:

A large number of studies have used age as an independent variable with less than clear results. Shorey (1969) in one of the earliest studies with teachers found a negative correlation between age and participation in continuing education activities. Hall (1973) also found that as age increased, participation decreased for a sample of home economists.

Other studies with pharmacists (Bernardi, 1974) and six other professions (Schrader, 1973) have shown no correlation between age and participation. In a recent study by Catlin (1981) using discriminant function analysis techniques, age was not found to distinguish between participants and nonparticipants.

Other research has shown that age is related to increased participation in continuing professional education. Hanna (1978) found that older college faculty were more inclined to attend professional activities than their younger counterparts. Bell (1979) found age was associated with expressed interest in mandatory and elective continuing professional education.

The present study will contribute to this research by examining age in two ways: (1) in a univariate linear regression with age as the independent variable and intent to participate as the dependent variable; and (2) including age as one of the variables entered into the discriminant function analysis. By these means it will be possible to indicate any correlation between age and the intent to participate.

PARTICIPANT'S LEVEL OF EDUCATION:

Studies have been conducted which examined the effect of level of education on participation. The studies with adult education populations conducted by Boshier (1971), Mansfield (1976) and Morstain and Smart (1977) indicate a positive correlation between higher-educational levels and participation in continuing education.

Studies completed with professional audiences have had less clear results. Shorey (1969) found that a teacher's educational level was positively related to participation. However, Molenda (1977) found no significant relationship between education and participation for educational technologists. Southern (1980) found that as graduate credits accumulated for teachers, participation decreased.

The results of these studies suggest less than clear guidelines for the researcher. One possible explanation of the outcomes may be that professionals vary in their reasons for participation which become manifest as their education level increases.

YEARS SINCE PARTICIPANT RECEIVED DEGREE:

This variable has received little attention in the research literature which is surprising since this measure would appear to be one of the most direct indicators of the need for continuing education. However, Catlin (1981) found that this variable failed to distinguish between participants and nonparticipants using discriminant analysis techniques.

PARTICIPANT'S EMPLOYMENT RESPONSIBILITIES:

Employment responsibility is another characteristic which has been used to describe participants. Mehl (1976) found that pastors with large congregations attended more professional meetings than did those with small congregations, though this could have been a function of availability of funds rather than desire for participation. Cooper (1966) also found that head nurses and nursing supervisors applied for more continuing education conferences than staff nurses. No relationship was found between job status and participation for pharmacists in the study completed by Bernardi. (1974) However, Southern (1981) found that employment responsibilities failed to distinguish between participant and nonparticipant teachers and supervisors.

PARTICIPANT'S LENGTH OF EXPERIENCE:

Shorey (1969) found a negative relationship between experience and participation by teachers in Canada, while Southern (1981) found no difference between participants and nonparticipants in their intent to participate based upon their length of experience. She did find, however, that nonparticipants with fewer than ten years experience expressed greater intent to participate than those with more than ten years experience. Mehl (1976) in a study of pastors found a negative correlation between experience and involvement in continuing education activities. Catlin (1981) found nonsignificant results for the effect of length of experience on participation. In general, the studies suggest that length of experience is inversely related to participation, though the strength of the measure is not high.

PARTICIPANT'S SALARY IN CURRENT YEAR:

Few studies have measured salary in relation to participation, possibly because of the sensitive nature of the data. Both Carter (1971) and Schrader (1973) found that as the salary of school administrator increased, participation increased. Phillips (1973) found that salary was a poor discriminator between engineers who participated and those who did not. Molenda (1977) in studying professionals in educational technology found nonsignificant results for salary and participation.

AMOUNT OF PARTICIPATION IN RECENT YEARS:

Catlin (1981) found that those who participated in continuing professional education less than two days within the last year rated all three factor scores—professional perspective, judicial competence and collegial interaction lower on the "Reasons for Participation" scale used in his study. He also found that those who participated six days or less within the last three years yielded lower scores on all three factors. In summary, the variables age, level of education completed, years since the last degree was received, employment responsibilities, length of experience, salary and amount of participation have received varying support from the research studies examining the relation of these variables to participation in continuing professional education. This study will examine these variables based upon an evaluation of the research reviewed in this section.

THE EXPECTATIONS OF OTHERS

The research conducted to date, though focused on personal orientations predisposing a person to participate in continuing professional education, has found that the influence of external pressures may affect the decision to participate. Burgess (1971) in testing Houle's typology found that one of the derived factors, "the desire to comply with formal requirements" was a stated reason for participation. Morstain and Smart (1974) found with an adult education sample that "external expectations" was one of the six derived factors of the study. Berg (1973) surveyed 102 staff nurses and found that those who took part in educational activities were more likely to be encouraged to participate by friends and relatives. Bevis (1975) studied three aspects of nursing-the professional, bureaucratic and service components and found the service component contributed significantly to participation, with the other two components acting as reinforcers. These studies suggest that involvement in educational experiences is not based solely on personal orientations, but includes at least some component of external influence which affects participation.

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REASONS FOR NONPARTICIPATION

A variety of studies have attempted to determine the underlying reasons for nonparticipation in adult and continuing professional education. One of the largest studies was completed in 1972 by the Educational Testing Service with 104 million persons between the ages of 16 and 60 living in the United States. (Carp. Peterson & Roelfs, 1974) They found that nonparticipants had less time available, were less interested in seeking a new job, had difficulty finding courses at convenient times and places, held heavier job responsibilities and were more tired of formal instruction than their participating counterparts. Boshier (1973) proposed that course dropout and nonparticipation are correlated. Based upon his research with 2.436 participants in adult education courses in New Zealand, he found dropout stemmed from the "interaction of internal psychological and external environmental variables" (p.256). He found that participants manifested greater self-institution congruence than nonparticipants who found the educational delivery system and its process difficult to comprehend and interact with. In another study by Bevis (1975) with a group of professional nurses, three aspects of professional practice were studied—professional, bureaucratic and service aspects. As previously described, the service component was most directly linked to participation in educational activities, except where conflict arose between the bureaucratic and service component, which resulted in reduced participation.

Finally, Dao (1975) in a study which attempted to determine the reasons for nonparticipation in adult education found the following clusters of reasons: (1) not enough time, (2) individual and personal problems, (3) difficulty in succeeding in educational activities, (4) violation of personal social norms against continuing education, (5) negative feelings toward the

institution offering instruction, (6) negative prior experiences in education, (7) the outcomes of educational participation not being valued, (8) indifference toward continuing education and (9) lack of awareness of educational opportunity.

Though the research cited in this review may not reflect the perspective of the professional, who by definition has attained at least some measure of competency in education, some of the reasons for nonparticipation cited may be exhibited by professionals.

The research studies indicate that nonparticipation is a function of both personal and social influences. The obstacles may vary from to little time to participate to a conflict between the desire to serve others and the bureacratic demands of the organization in which the service operates. These studies suggest that research should look at both personal and social influences that affect participation.

AN ALTERNATIVE MODEL OF PARTICIPATION:

Most of the studies to date have focused on adult education populations, using some form of Houle's typology. Grotelueschen (1980), who was concerned about learning for professionals expressed the view that:

...It is not surprising that this line of research fails to meet the needs of research designed to build relevant theory and to make contributions to the practice of continuing professional education. (p.13)

He felt that the studies examining Houle's typology were weak because: (1) they were taken primarily from adult, not professional populations; (2) demographic characteristics which could be compared across professions were not reported; and (3) the course offerings were too broad compared to professional population needs. Based upon the perceived weakness of "learning orientations" research, Grotelueschen sought a theoretical model which would apply to professional populations. The outcome of his search was the expectancy-value theory of Fishbein, which linked attitude and belief to a professional's intent to participate. In the following section, the development of this theory will be described.

ATTITUDE-BEHAVIOR THEORIES

The role of attitude in explaining an individual's behavior has been a center of concern for many years. A number of theories have been developed to link attitude and behavior in a cause-effect relationship with little success. In the following section a variety of attitude theories will be examined for their impact on the attitude-behavior controversy and Fishbein's expectancy-value model, which is used in this study.

That there is a direct link between a person's attitude toward an object and the individual's subsequent action toward the object has yet to be proven satisfactorily. The research conducted by LaPierre (1934) and Minard (1952) suggests that behavior cannot be determined from knowledge of a person's attitude toward an object. Studies by Nettler and Golding (1946), DeFleur and Westie (1958), and Sherif and Hovland (1961) suggest that behavior is a function of attitude. However, the studies by Festinger (1957) indicate that attitude is most likely to conform to a person's behavior, rather than the inverse. These outcomes suggest the difficulty in predicting a person's behavior from knowledge of the individual's attitude.

A variety of reasons have been suggested for the inconclusive results. Insko (1967) suggested the problems arise from lack of research on the relation between attitude and behavior. He said:

The theories seem to have concentrated on the relation between attitude (affection) and opinions (cognitions) and have almost completely neglected behavior (conation). (p.348)

Fishbein (1975) believes the inconclusive evidence arises from the use of inappropriate psychometric measures with improperly defined variables. After reviewing over 750 articles published between 1968 and 1970, he found almost 500 different ways of conceptualizing attitude. Kiesler (1969) suggested that these outcomes are the result of using global attitude measures to explain behaviors that are situationally specific. Engle (1978) believes that too much emphasis is placed on a single variable, attitude, which common sense would suggest will not explain a complex behavioral act. To alleviate these shortcomings a number of scientists have developed models which attempt to explicate the relation between attitude and behavior.

Dulany (1961) was one of the earliest theorists to investigate the relation between attitude and behavior in studies of verbal conditioning and concept learning. Using the concept of behavioral intent, Dulany developed the following model:

 $BI = ((RHD)(A))w_0 + ((BH)(MC))w_1$

where BI = the subject's behavioral intent to respond in a specific manner

- RHD = the "hypothesis of the distribution of reinforcement," or the subject's hypothesis that a particular response will lead to a specific outcome,
 - A = the affective value of reinforcement, or the subject's evaluation (attitude) toward the outcome,

BH = the subject's "behavioral hypothesis" or

what he or she anticipates should be done in the situation,

MC = the subject's motivation to comply with the expectations of the situations, and w_0w_1 = beta weights derived from the regression equation.

The major contribution of Dulany's model is the addition of behavior intent as the most direct indicator of behavior. In addition, the components (RHD) and (A) are basically equivalents of Fishbein's belief and attitude, respectively.

Rosenberg (1960) was another scientist who suggested that beliefs <u>and</u> attitudes are central to the prediction of behavior. Rosenberg felt that attitude was best explained as "a relatively stable affective response to an object" (p.321). He also held the view that a subjects' beliefs about an object's capability to enhance or retard a given outcome affected the subject's orientation toward the object. Thus the more an object was "instrumental in obtaining positively valued goals (or consequences) and blocking (or preventing negatively valued goals) the more favorable the person's attitude toward the object" (Fishbein, 1975,p.31). Rosenberg's model is displayed below:

$$A_{0} = \sum_{i=1}^{n} I_{i} V_{i}$$
where A_{0} = attitude toward the object,
 I_{i} = the probability the object (0) would
increase or decrease the possibility
of attaining the goal i,
 V_{i} = value importance, or the degree of
importance attached to value i and
 n = the number of values

Rosenberg's model is very similar to the early version developed by Fishbein, with the (I) component being equivalent to Fishbein's belief component. However, Fishbein's extended model divides the belief component into subjective social and personal belief's which makes Fishbein's model more accountable than Rosenberg's for normative belief's that may impinge on a person's intent to carry out an action toward an object.

The Subjective Expected Utility (SEU) model of behavioral decision theory (Edwards, 1954) is also linked to Fishbeins' model. In the SEU model, the subject is viewed as developing strategies to reduce expected loss and maximize gain when attempting a specific action. Each alternative strategy is a function of the subjective probability that specific outcomes will follow a given act, multiplied by the subjective values (utilities) perceived to occur with those outcomes. By summing across all possible outcomes the "best" behavior alternative can be selected. The model is displayed below:

	SEU	=	$\Sigma SP_i U_i$ i=1 i
where	SEU	Ξ	the subjective expected utility,
	SP	=	the subjective probability that a
			choice will lead to an outcome i,
	U	=	the subjective value or utility of
			outcome i, and

n = the number of relevant outcomes.

The SEU theory proposed that the expected utility, which corresponds closely to Fishbein's attitude component, is the primary predictor of behavior. However, Fishbein's model expands this concept to include normative beliefs when predicting a person's intent to act in a particular manner. The research conducted by Dulany (1961), Rosenberg (1961) and Edwards (1954) has contributed to our understanding of the relation between attitude and behavior. However, each of these models has been unable to effectively predict behavior based upon the elements of the model. Though each model contributed additional elements to the puzzle of the relation between attitude and behavior, they each failed to increase the ability to predict behavior from knowledge of a person's attitudes. Because of this weakness, Fishbein's expectancy-value model offered hope because it was able to more accurately predict behavior by examining a persons <u>intent</u> to behave in a particular manner. For this reason, Fishbein's model is described more fully below.

FISHBEIN'S EXPECTANCY-VALUE MODEL

The history of research on attitude theory has been based primarily upon the assumption that as attitude was changed, behavior would correspondingly change. However, Fishbein (1967) in reviewing the research stated:

After more than 70 to 75 years of attitude research, there is still little, if any, consistent evidence supporting the hypothesis that knowledge of an individual's attitude toward some object will allow one to predict the way he will behave with respect to that object. Indeed, what little evidence there is to support any relationship between attitude and behavior comes from studies that a person tends to bring his attitude into line with his behavior rather than from studies demonstrating that behavior is a function of attitude. (p.477)

Though there was less than complete agreement with Fishbein's analysis, he proceeded to develop an early model that incorporated beliefs as the building block in predicting behavior in order to overcome the deficiencies of previous theories. His view was that beliefs were related to attitudes which in turn were approximate predictors of behavior. The earliest model consisted of two components: (1) belief which was defined as the probability that an object does or does not have a particular attribute, and (2) the affective term which indicated whether or not the attribute was positively evaluated. The model appeared as:

	A	=	Σ B _i a _i
where	A	=	attitude toward the object,
	B _i	=	the ith belief about the object,
	a _i	=	the evaluation of the belief,
	n	=	the total number of beliefs

After research was conducted on the model, Fishbein revised his theory. The primary alteration was the "attitude toward the object" was replaced by "attitude toward the act". This was based on his belief that:

...It really doesn't make a lot of difference how much a person likes a given product, or how good that product's "brand image" is—if the consumer doesn't believe that buying that product will lead to more "good consequences" and fewer "bad consequences" than buying some other product, they will tend to buy the other product. (Fishbein, 1967, p.477)

The second modification in the model was the addition of components to measure the personal and social norms governing behavior and the motivations to comply with those norms. By addition of these norms, Fishbein felt his model could more accurately predict behavior. Thus the model developed by Fishbein appeared as follows:

	BrvI	=	$w_1(A) + w_2(SSN) + w_3(SPN)$
where	В	=	the behavior,
	I	=	the intent to perform behavior B,
	A	=	the attitude toward performing
			behavior B,
S	SN	=	the subjective social norm,

SPN = the subjective personal norm and

 w_1, w_2, w_3 , = empirically determined weights

A major test of Fishbein's model was completed by Wilson, et al. (1975) in which responses to a questionnaire were used to predict which brand of toothpaste a housewife would select as a free gift after completing the survey. An average coefficient of determination or "R" of 0.672 was found between intent as measured by the responses and the actual toothpaste selected. King (1975) measured the intent of respondent's to attend church and found a high correlation with actual attendance. Southern (1980) in a study with teachers found that all three components of Fishbein's model contributed to the intent to participate.

The effectiveness of the expectancy-value model in predicting behavior was also tested by Schwartz and Tessler. (1972) After administering a questionnaire to 195 adults concerning their intent to be medical transplant donors, they found personal normative beliefs, attitudes, and social normative beliefs contributed to the intent of respondent's to donate parts of their bodies to medical science. The model accounted for approximately 50% of the variance in intent, which lent credibility to the model, but also indicated significant variance which was unexplained by the model.

A review of studies completed in Great Britain and the United States was completed by Ryan and Bonfield (1975) which also cast doubt on the model's sufficiency to explain a person's intent to perform a particular behavior. The average correlation between intent and behavior was found to be 0.435 while the average multiple correlation of the model's components was 0.62. Since this explained approximately 18% and 38% of the variance respectively, some doubt was expressed about the adequacy of the model. After analysing these results, Engle (1978) suggested that one of the shortcomings of Fishbein's model is the exclusion



Figure 2.3 Modified Fishbein Model of <u>anticipated circumstances</u> as a situational variable to enhance the prediction of behavior. Engle felt that even though a person's belief structure may be positive toward a particular behavior, that individual may be aware of circumstances that are likely to interfere, which could alter the intent to behave in a specific manner. Thus Fishbein's model would be modified as shown in Figure 2.3. The present research will examine this modification of Fishbein's model to determine the contribution of each component to the variance in intent to participate in continuing professional education.

Fishbein's expectancy-value model has been used by researchers to predict the intent of people to behave in a particular manner. The model has been evaluated in a number of settings which are primarily consumer product oriented. In each of these settings the model was effective. The present study will examine the model in a new setting where the desire is to examine professional's intent to participate in continuing professional education.

CHAPTER SUMMARY

Within this chapter adult education, lifelong learning and continuing professional education have been defined and distinguished from each other. Special emphasis was given to how continuing professional education is derived from adult education and lifelong learning. The societal, professional and personal pressures stressing renewal of professional skills were also examined. Studies which have examined the "learning orientations" of participants in adult education were examined for their impact on the present study. Research studies which have looked at demographic characteristics of participants were also reviewed to determine

how strongly the variables were related to participation in continuing professional education. The characteristics examined were age, level of education, years since the last degree was received, employment responsibilities, length of experience, salary and amount of participation in continuing professional education in recent years. The role of the expectations of others on participation was also examined for its impact on the professional. The research which attempted to understand the reasons why people do not participate in continuing education was also reviewed. Finally, a review of of the relevant literature in the area of attitude research and Fishbein's expectancy-value model was completed for it's application to the present study.

CHAPTER 3: RESEARCH DESIGN

INTRODUCTION

This chapter introduces the methods and procedures used in this study. It includes the description of the dependent and independent variables and the research and statistical hypotheses. Also included is a description of the survey instruments, the reliability of the survey questionnaires, description of the study population, sample selection procedures, data analysis procedures and justification for selection of the statistical measures.

DEPENDENT AND INDEPENDENT VARIABLES

The purpose of this study is threefold: (1) to determine if there are any demographic and personal characteristics which correlate with the expectancy-value scales and the two measures of intent to participate in continuing professional education; (2) to determine how effective Fishbein's expectancy-value model is in predicting a professional's intent to participate in continuing professional education; and (3) to discover if there are personal and professional characteristics which can differentiate between participants and nonparticipants in continuing professional education activities.

To meet these goals the dependent variables which will be examined consist of the scores of the respondents on the Attitude, Subjective Social Norm, Subjective Personal Norm and Anticipated Circumstances Scales derived from the treatment. The independent variables include:

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- 1. Age
- 2. Level of formal education completed
- 3. Length of time since the last degree was received
- 4. Nature of employment responsibilities
- 5. Amount of time spent in administration
- 6. Amount of time spent in teaching or training
- 7 Amount of time spent in curriculum or instructional design
- 8. Amount of time spent in library or information science
- 9 Amount of time spent in audio-visual production
- 10. Amount of time spent in research
- 11. Amount of time spent in consulting
- 12. Amount of time spent in sales or marketing
- 13. Amount of time spent as a student
- 14. Length of time in present employment role
- 15. Salary in the past calendar year
- 16. A mount of participation in continuing professional education within the last three years.

RESEARCH HYPOTHESES

Prior to the hypotheses for each section the research question to be answered is stated. The first research question is stated below:

Research Question: What are the personal and professional characteristics which correlate with a professionals intent to participate in continuing professional education? Hypothesis 1: As the age of the respondent increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

<u>Hypothesis 2:</u> As the <u>level of formal education</u> completed by the respondent increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

<u>Hypothesis 3:</u> As the length of <u>time since the last degree</u> was received increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.

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f. The intent to participate in continuing professional education within the next three years will decrease.

Hypothesis 4: As the amount of time spent in administration increases:

a. The score on the Attitude scale will decrease.

- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

<u>Hypothesis 5:</u> As the amount of <u>time spent in audiovisual production</u> increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

Hypothesis 6: As the amount of time spent in consultation increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.

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f. The intent to participate in continuing professional education within the next three years will decrease.

Hypothesis 7: As the amount of time spent in sales promotion increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

<u>Hypothesis 8:</u> As the <u>length of time</u> a respondent has been <u>in</u> his or her employment role increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

Hypothesis 9: As the salary in the past calendar year increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.

f. The intent to participate in continuing professional education within the next three years will decrease.

<u>Hypothesis 10:</u> As the amount of <u>time spent in teaching or training</u> increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase

<u>Hypothesis 11:</u> As the amount of <u>time spent in curriculum or instructional</u> development increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

<u>Hypothesis 12:</u> As the amount of <u>time spent in library or information</u> service increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

Hypothesis 13: As the amount of time spent in research increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

Hypothesis 14: As the amount of time spent as a student increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

<u>Hypothesis 15:</u> As the amount of <u>time spent participating in continuing</u> professional education within the last three years increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.

.

- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

<u>Research</u> Question: How effective is the modified Fishbein Expectancy-<u>Value model in predicting a professionals intent to participate in continuing</u> professional education?

<u>Hypothesis 16</u>: Four predictors, Attitude, Subjective Social Norm, Subjective Personal Norm and Anticipated Circumstances, will together contribute significantly to the variance of the predicted variables that measure intent to participate in continuing professional education.

Research Question: What are the personal and professional variables which distinguish the professional who participates in continuing professional education from the one who does not participate?

<u>Hypothesis 17</u>: There will be a significant difference between <u>participants</u> <u>and nonparticipants</u> on the items representing personal and professional characteristics measured on the Respondent Information form.

STATISTICAL HYPOTHESES

The following statistical hypotheses will be examined in this study: <u>Hypothesis 1</u>: Age: $p_{xy} = 0$ <u>Hypothesis 2</u>: Level of formal education: $p_{xy} = 0$ <u>Hypothesis 3</u>: Time since the last degree: $p_{xy} = 0$

<u>Hypothesis 4</u>: Time spent in administration: $p_{xy} = 0$ <u>Hypothesis 5</u>: Time spent in audio-visual production: $p_{xv} = 0$ <u>Hypothesis 6</u>: Time spent in consultation: $p_{xv} = 0$ <u>Hypothesis 7</u>: Time spent in sales promotion: $p_{xy} = 0$ <u>Hypothesis 8</u>: Length of time in employment role: $p_{xy} = 0$ <u>Hypothesis 9</u>: Salary: $p_{xy} = 0$ <u>Hypothesis 10</u>: Time spent in teaching or training: $p_{xy} = 0$ Hypothesis 11: Time spent in curriculum or instructional development: p_{xv}=0 <u>Hypothesis 12</u>: Time spent in library or information service: $p_{xy} = 0$ <u>Hypothesis 13</u>: Time spent in research: $p_{xy} = 0$ <u>Hypothesis 14</u>: Time spent as a student: $p_{xv} = 0$ Hypothesis 15: Time spent participating in continuing professional education: $p_{xy} = 0$ Hypothesis 16: Intent to participate in continuing professional education: $\beta = \beta = \beta = 0$ 1 2

Hypothesis 17: Participants and nonparticipants: $\lambda = 0$

DESCRIPTION OF THE SURVEY INSTRUMENTS

The development of the survey instruments was completed in three stages. In the pretest stage a stratified random sample of 50 respondents was asked to respond to open-ended questions which elicited salient beliefs of the respondents for the Attitude, Subjective Social Norm, Subjective Personal Norm and Anticipated Circumstances Scales.

After the pretest was administered, the responses were tabulated and compared with previous research using Fishbein's model. Using the tabulated responses and a review of the literature, the survey instrument questions were developed. The items were reviewed by professionals who commented on the face validity of the items. Once the items were reviewed, a pilot study with 50 respondents was conducted to examine the clarity of the survey instruments.

Upon completion of the pilot study, final revisions were made in the questionnaire (Appendix A) and it was administered to a stratified random sample of the population (N=504). Two followup mailings were used to increase the return rate.

THE MEASUREMENT SCALES:

Four scales were used as measures in the study. They are described below:

The <u>Attitude Toward Participation</u> Scale focused on the consequences that may occur as a result of participation in continuing professional education. Using the expectancy-value model described by Fishbein (1980), attitude is measured using the following formula:

Attitude (A)	Ξ	$\sum_{i=1}^{n} b_i e_i$
where b	=	the professional's subjective
		estimate of consequence i
		occurring and
е	=	the value placed on a consequence
		i by the professional and
n	=	the number of consequences listed
		in the measuring instrument.

Thus each item on the scale is rated twice: first, for the value the respondent places on the consequence; and secondly, for the likelihood of the consequence actually occurring as a result of participation. The consequence portion of the item is rated on a seven point Likert Scale with a six (6) being "high value" and zero (0) "no value." The likelihood portion

of the item is also rated on a seven point Likert Scale, with the values ranging from a high of six (6) for "likely" through a score of zero (0) for "unlikely." A score for each item is generated by multiplying the two components of each item. These scores are then summed across all items to derive a composite score for the Attitude Scale.

Participation in continuing professional education depends in part on a person's perception of the expectations of other people and the importance placed on those expectations. The <u>Subjective Social Norm</u> Scale was designed to measure a respondent's perception of the expectations of "significant others" toward participation in continuing professional education. The scale is based upon the following formula:

SSN	=	$\sum_{i=1}^{\infty} b_i m_i$
where b	=	the social normative belief (i.e., the
		professional's belief that a reference
		group or individual (i) thinks she
		should or should not perform behavior
		(b),

m = the motivational value attributed to what referent (i) thinks and

n = the number of relevant referents

Each item on the <u>Subjective Social Norm</u> Scale has two components to rate: first, the respondent rates the belief that "significant others" view participation in continuing professional education as important; and second, the respondent rates how important the expectations of "significant others" are in the respondent's intent to participate in continuing professional education.

The scoring for the first component of the item is based on a five point Likert Scale with items ranging from a plus two (+2) for "thinks I should participate" to a minus two (-2) for "thinks I should not participate." The second component is also rated on a five point Likert Scale ranging from a four (4) for "very important" to zero (0) for "not important." A total score for each item is derived by multiplying the two component scores. These scores are then summed across all the items for a composite score for the Subjective Social Norm Scale.

In order to minimize the effect of any "significant other" who did not affect the respondent's situation, each individual was requested to ignore any items which did not apply. Opportunity was given to add persons or organizations that were omitted from the scale so the total-scale score represented the influence of persons influential in the life of the respondent.

Whether a professional will participate in continuing professional education depends in part on an individual's perception of what a professional's beliefs should be concerning continuing education and to a large extent of the professional's willingness to act on those beliefs. The <u>Subjective Personal Norm</u> Scale was designed to measure the respondent's personal beliefs about participation in continuing professional education and the extent to which the respondent is willing to act on those beliefs. The development of the scale was based upon the following model suggested by Fishbein (1980):

			n
	SPN	=	$\sum_{i=1}^{\Sigma} \mathbf{b}_{i} \mathbf{m}_{i}$
where	SPN	=	the subjective personal norm,
	b	=	the personal normative belief,
	m	=	the motivation to comply with personal
			normative belief i and
	n	=	the number of personal normative
			belief

Using this model, each item had two components: first, the normative belief which was measured using a five point Likert Scale with a score ranging from four (4) for "high value" to zero (0) for "no value."; second, the motivation to comply with the normative belief, was measured using a five point Likert Scale where the scores ranged between four (4) for "very willing" to zero (0) for "not willing." A total score for the Subjective Personal Norm Scale was generated by determining the product of the two components of each item and then summing across all the items.

A professional's intent to participate in continuing professional education can be strong, but circumstances may interfere as suggested by Engle. (1978) The <u>Anticipated Circumstances</u> Scale was created to measure the professionals perception of circumstances that might impinge on the intent to participate in continuing professional education. Using the responses suggested by the respondents during the pre-test, the scale items were developed using a five point Likert Scale. The score for each item ranged from a zero (0) on the "likely" to prevent participation portion of the scale, to a four (4) for the "unlikely" end of the scale. By summing across all items a composite score for the scale was computed.

The <u>Respondent Information Form</u> was developed to measure personal and professional characteristics of the respondents. Items for the instrument were generated by reviewing previous studies to determine the items used as measures of personal and professional characteristics. Based upon this analysis and consideration of the research hypotheses, items were generated and administered to respondents as part of the pilot study. Respondents were requested to suggest changes which would improve the clarity of the items. Based upon the respondent's suggestions, revisions were made in the instrument and it was administered with the scales during the final study.

RELIABILITY OF THE SURVEY INSTRUMENTS

Kimble (1978) stated that "reliability refers to the extent to which a test or other measure performs consistently" (p.186). The statistical measure coefficient alpha from the "Reliability" program of the <u>Statistical</u> <u>Package for the Social Sciences</u> was used to analyze the reliability of the four scales. The coefficient alpha is "a measure of the internal consistency of responses of each item of a scale across respondents. It is determined for scales where respondents may receive a different numerical score on an item." (Moser & Kalton, 1972, p.354) The reliability in each scale is computed by the formula as given by Magnusson (1966). For this study the reliability measures for each scale were computer as follows:

Coefficient Alpha

Attitude Scale: .8903 Subjective Social Norm Scale: .8850 Subjective Personal Norm Scale: .9161 Anticipated Circumstances Scale: .8210

DESCRIPTION OF THE STUDY POPULATION

The population for this study consisted of members of the Association for Educational Communications and Technology listed in the membership directory as of January 1982. The population was selected because there are currently no mandatory requirements for continuing professional education which could alter the outcome of this study.

The goal of the Association for Educational Communications and Technology is the application of technology to educational problems. The membership of the organization demonstrates the diverse ways in which this goal is applied. Members include librarians, teachers, administrators of media services, media specialists, media producers, consultants, instructional developers and students. Their employment roles can be found in a wide variety of settings including public school systems, community colleges, universities, government and non-profit agencies and business and industry.

SELECTION OF THE SAMPLE

The size of the sample was selected using Cohen's (1975) power analysis procedure. Using the procedure, it was determined that 25 respondents would be required for each strata in the multiple regression analysis. In order to compensate for the likelihood a portion of the survey instruments would not be returned, a sample of 503 respondents was used for the study. 309 returns were received from the respondents. 13 returns were excluded from data analysis because they were incorrectly completed, resulting in 296 responses useable for data analysis. Table 3.1 summarizes the response pattern.

The purpose of Cohen's power analysis is to determine the sample size for the study that would reduce the likelihood of Type II errors. Since the minimum return rate of 25% for each strata was received, the power of the test as determined by the strata size was at least 0.80 for each strata. This indicates that there is a 20% likelihood of accepting a null hypothesis when in fact there is a difference. The corresponding Type I error was prespecified as 0.05. This represents a 1 in 20 chance of rejecting the null hypothesis when it is correct.

	∦sent survey	# of responses	Usable responses	<pre>% of Usable responses</pre>
K-12	119	100	95	79
Junior/Community	39	32	26	67
College/Universit	y 136	100	99	72
Business/Industry	47	37	36	76
Student	60	5	5	8
Other	42	35	35	83
None	60	0	0	0
Totals	503	309	296	58%

Table 3.1 Survey Instrument Responses

RANDOM SELECTION PROCEDURE

The random selection of respondents occurred in four stages. First, organizational memberships and individuals from foreign countries were omitted from the membership list. This procedure was carried out in order to facilitate the return of questionnaires, since it was difficult to include foreign postage in the return envelopes. The removal of organizations reflected the need to solicit the perspective of individuals, not organizations. Once organizations and foreign memberships were removed from the directory, a stratified sample of 504 respondents was randomly selected from the membership list. Following this initial sampling additional selections were made from the remaining names in the directory for the pre-test (n=50) and the pilot study (n=50). This procedure, recommended by Babbie (1973), reduces the possibility of contaminating the sample by sending the survey to the same person more than once, and yet allows selection from the same population pool.

SAMPLE STRATIFICATION:

The stratified random sample consisted of six strata:

- 1. Kindergarten-Twelfth grade (including Administrators)
- 2. Junior/Community College
- 3. College/University
- 4. Business/Industry
- 5. Student
- 6. Other
- 7. None

The "other" category was included as a separate strata so all members of the association could be included in the sample. A small number of association members are employed in positions where there are few other professionals, namely military positions, non-profit organizations, regional media centers, government organizations, public libraries and state departments of education. Since this group represented an important minority of the population, they were sampled as a separate strata.

The membership directory also included members who failed to indicate any employment category. In order to incorporate these people, the study was originally designed to sample this group as a separate strata. However, the respondents from this group all indicated an employment category on their returned questionnaires so they were incorporated into the other strata.

In spite of two attempts to encourage completion of the survey instruments, only five questionnaires were usable as data sources for the student strata. Since this was too few for statistical analysis, the student strata was omitted from data analysis. The reason for the low return rate is unclear, but two possibilities are suggested. The first possibility is that students are so involved in their present education that they lack interest in examining their future educational needs. The second alternative is that the members sampled for the student strata are no longer in school. Most members of AECT hold a Masters degree which commonly takes one year to complete. It may be possible that in the time between development of the membership directory and administration of the survey instruments members moved from student to employee status. Based upon examination of the questionnaires the second alternative appears to be most compatible with the data.

DATA ANALYSIS PROCEDURES

Upon receipt of the survey instruments from the respondents, the data was coded and submitted to the computer at Michigan State University. A variety of data analysis procedures were used for each of the research hypotheses. This section describes the analysis procedures used:

- <u>Hypothesis 1-15:</u> These hypotheses required the use of Pearson Product Moment Correlations to determine the correlation between the independent variable and the score for the scales and the intent to participate in continuing professional education.
- <u>Hypothesis 16:</u> This hypothesis utilized the multiple regression technique to determine the amount of variance each scale contributed toward the intent to participate in continuing professional education.
- <u>Hypothesis 17:</u> This hypothesis required the use of discriminant function analysis procedures. This technique is used to distinguish between the two groups, participants and non-participants, using data from each scale and the Respondent Information form.

JUSTIFICATION FOR SELECTION OF THE STATISTICAL MEASURES

Three statistical procedures were used for the study, Pearson Product Moment Correlation, Multiple Regression and Discriminant Function Analysis. The procedures are described below.

Pearson Product Moment Correlations were used as a measure of association indicating the strength of the linear relationship between two variables. This measure was used to determine the linear relationship between the dependent variables intent to participate, Attitude, Subjective Social Norm, Subjective Personal Norm and Anticipated Circumstances scales and the independent variables measured on the Respondent Information form.

"Multiple regression is a general statistical technique through which one can analyze the relationship between a dependent or criterion variable and a set of independent or predictor variables." (Kim, 1975, p.321) Using this method, the best linear equation can be found that will predict the criterion variable. By using the procedure, the relationship between the dependent variable intent to participate in continuing professional education and the independent variables measured on the Attitude, Subjective Social Norm, Subjective Personal Norm and Anticipated Circumstances scales can be determined.

Discriminant Function Analysis was used to compare participants and nonparticipants. Since the goal of discriminant analysis is to statistically combine discriminating variables in such a way as to force the variables to be as statistically distinct as possible, this procedure will be used to determine which variables best distinguish between the two groups.

CHAPTER SUMMARY

This chapter introduced the research methods and procedures used in this study. The variables examined in the study were listed using research and statistical hypotheses. The hypotheses were grouped by method of data analysis which consisted of Pearson Product Moment Correlation, Multiple Regression Analysis and Discriminant Analysis. The four scales. Attitude, Subjective Social Norm, Subjective Personal Norm and Anticipated Circumstances, were described along with the reliability of the instruments. The study population which consisted of members of the Association for Educational Communications and Technology was described in conjunction

with the sample selection procedure. The final section of the chapter explained the data analysis procedures and the justification for the statistical measures that were used.

CHAPTER FOUR: DATA ANALYSIS

INTRODUCTION

This chapter contains the analysis of responses completed by the members of the Association for Educational Communication and Technology. The chapter is divided into five sections. The first section reports the demographic and professional characteristics of the respondents. The second section examines the hypotheses describing the independent variables measured by the expectancy-value scales. It also discusses the two measures of intent to participate in continuing professional education for their correlation with the dependent measures examined in the Respondent Information form. The third section presents hypotheses utilizing multiple regression analysis to measure the intent to participate in continuing professional education. The fourth section contains the results of the discriminant function analysis which differentiates between participants and nonparticipants. The final section summarizes the results for all the research hypotheses.

RESPONDENT CHARACTERISTICS

Respondents were requested to provide information about their professional life by completing the Respondent Information form. A total of 296 responses were usable for data analysis. Table 4.1 shows the summary data for each variable listed in this section.

The majority of the respondents (69%) were between the ages of 31 and 50, and had completed a Master's degree (56%). Forty-six percent spent 50 hours or less in the years 1979 through 1981 on any type of

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Characteristic	Frequency	Adjusted Proportion#	Characteristic	Frequency	Adjusted Proportion #
Age 20-30	ЯC	6	CPE Hours 1979- 1081		
		01 • 9c	- 07-	C	00
41-50	96	000	0 1-50	500	- 26 - 26
51-60	56	.19	51-100	55	.19
61-70	7	.02	101-150	24	.08
71+	-	00.	151-200	11	10.
Missing	m	.01	201-250	10	.03
Highest Level			251-300	11	.04
of Education			301-350	7	.02
High School	2	.01	351-400	Ś	.02
Associate Deg.	m	.01	400+	24	.08
Bachelors Deg.	21	.07	Missing	14	. 05
Masters Deg.	165	.59	Primary Place of		
Specialist Deg.	15	. 05	Employment		
Doctoral Deg.	87	.30	K-12	64	.32
Missing	m	.01	Jr./Comm. Coll	. 26	• 09
When Last Degree			Coll./Universi	ty 98	
Was Received			Bus./Industry	36	.12
1941-1950	m	.01	Student	_ ت	.02
1951-1960	13	.05	Other	35	.12
1961-1970	88	.31	Missing	2	.01
1971-1980	158	.54)		
1981+	27	.10			
Missing	7	.03			-
* 🖡 may not equal	100% due 1	co rounding			

Characteristic	Frequency	Adjusted Proportion [#]	Characteristic	Frequency	Adjusted Proportion [#]
Years in Employ- ment Role 1-5 6-10 11-15 11-15 16-20 204 Missing 204 Missing 205 815,000-14,999 \$25,000-24,999 \$25,000-24,999 \$35,000-24,999 \$35,000-24,999 \$35,000-24,999 \$35,000-24,999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999 \$35,000-44,9999	133 133 133 133 133 133 133 133 133 133	45 19 00 11 19 19 19 19 19 19 19 19 19 19 19 19	Time in Administration 05 1-105 21-305 21-305 51-605 61-705 71-805 81-905 91-1005 Missing 71-805 81-905 71-805 81-905 71-805 81-905 81-10	668846599966 688465999 698546595 699555 69955 69756 69756 69	22000000 220000000 2000000000 200000000
* > may not equa.	T INUE QUE CO	counting			

Table 4.1 (cont'd)

Characteristic	Frequency	Adjusted Proportion *	Characteristic	Frequency	Adjusted Proportion#
Missing Missin	× ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	80000000000000000000000000000000000000	AV This AV The AV The AV The AV The AV The AV The AV The AV The AV The AV The AV The AV The AV The AV The AV The AV AV The AV AV The AV AV The AV AV The AV AV The AV AV The AV AV The AV AV The AV AV The AV AV The AV AV The AV AV The AV AV AV AV AV AV AV AV AV AV AV AV AV		4.1.0.0000 7.2.0.0000 7.0.0000 7.0.0000 7.0.000 7.000 7.00000 7.00000000
* 5 may not equa	1 100% due	to rounding		ł	

Table 4.1 (cont'd)

Characteristic	Frequency	Adjusted Proportion#	Characteristic	Frequency	Adjusted Proportion#
A Time A Time Consultation 0% 1-10% 1-10% 21-10% 51-60% 61-70% 81-90% 91-100% 81-90% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-100% 91-90% 91-90% 91-90% 91-90% 91-90%	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	720000000 570000000000000000000000000000	A Times Student Student Student Student 36 0% 0% 11-1-0 0% 21-1-200% 31-1-200\% 31-1-20	52 72 8 70 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	8 0000000000 0000000000000000000000000
91-100% Missing	- - 00	00.			
* 🖌 may not equal	. 100% due	to rounding			

Table 4.1 (cont'd)

continuing professional education examined in this study. The primary place of employment was in public school education, either kindergarten through twelfth grade (32%) or college or university (33%). Twenty-four percent of the respondents spent more than fifty percent of their time in administration, while 15% spent fifty percent or more of their time teaching or training. A majority of the respondents (70%) have been in their present employment role ten years or less. The highest percentage of responses were in the salary ranges 20,000-24,999 (19%) and 25,000-229,999 (21%).

The respondent data was also examined to develop a profile of the average respondent from this survey. The average respondent was forty-two years old, held a masters degree plus additional credit hours and received the last degree in 1972. The respondent participated in an average of forty one hours of continuing professional education each of the last three years, was employed in public schools in either kindergartentwelfth grade education or college or university, maintained the existing employment role for the last eight years and attained a salary in the range of \$25,000-\$29,999. The average respondent spent the following percentages of time in various employment responsibilities:

Administration	36%
Teaching/Training	21%
Curriculum/Instructional Development	11%
Library/Information Service	10%
Audiovisual Production	10%
Research	3%
Consultation	6 %
Sales Promotion/Marketing	1%
Student	1%

CORRELATION ANALYSIS

In this section the correlation between the variables are examined using the Pearson Product Moment Correlation technique. The variables are the two measures of intent to participate in continuing professional education measured in the Respondent Information form and the scores from the expectancy-value scales. The variables are the following measures which are listed in the Respondent Information form:

Age

Level of formal education completed Length of time since the last degree was received Amount of time spent in administration Amount of time spent in audio-visual production Amount of time spent in consultation Amount of time spent in sales promotion Length of time the respondent has been in present employment role Salary in the past calendar year Amount of time spent in teaching/training Amount of time spent in curriculum/instructional development Amount of time spent in library/information science Amount of time spent in research Amount of time spent as a student Amount of time spent participating in continuing professional education within the last three years The research question to be answered in this section is:

Research Question: What are the personal and professional characteristics which correlate with a professionals intent to participate in continuing professional education?

The hypotheses to be examined in this section are: Hypothesis 1: As the age of the respondent increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

Because of the large number of correlations (90) which increases the likelihood of finding significant correlations, the scores were corrected for attenuation as indicated in Table 4.2.

Three variables, Attitude (P = >-.1491), intent to participate in continuing professional education within the next year (P = >-.1780) intent to participate in continuing professional education within the next three years (P = > -.2669) were significantly correlated with age. The direction of the correlation indicates that as the age of the respondent increases, the score on the Attitude scale and the the two measures of intent to participate in continuing professional education will decrease.

Table 4.2 Correlation Matrix of Participant Characteristics with Expectancy-Value Scale and Intent to Participate (N=296)

At	ttitude	Subjective Social Norm	Subjective Personal Norm	Anticipated Circumstances	CPE Next Year	CPE 3 Years
Age (N=290)	1407## (1491##)	0522 (0555)	.0033 (.0034)	0115 (0127)	1780###	2669***
Level of Educa- tion (N=294)	.0101 (.0107)	.1378** (.1465**)	.1039 * (.1086*)	.0733 .0809)	.0785	.0932
Time since Degree Received (N=294)	e1432##)(1518##)	0097 (0103)	1118 * (1168 *)	0726 (0801)	- .1553 * *	2021###
CPE Last 3 Years (N=294)	.1308 * (.1386 *)	.0741 (.0788)	.1094* (.1143*)	0054 (0060)	.1353*	.1074*
<pre>% Time in Admini- stration (N=292)</pre>	0688 (0729)	0607 0645)	0549 (0574)	.0035 (.0039)	0140	0852
% Time in Teach./ Training (N=292)	/ .1422## (.1507##)	.0738 (.0785)	.1536** (.1605**)	0261 (0288)	.0560	.0723
<pre>% Time in Curr./ I.D. (N=292)</pre>	0859 (0910)	.0113 (.0120)	0489 (0511)	.1446** (.1596**)	.0056	.0655
<pre>% Time in Lib- rary/Information</pre>	.0408 (.0432)	.0402 (.0427)	.0034 (.0036)	0474 (0523)	0257	.0196
*=p >.05 **=p >	>.01 *** =	:p > .001	Correlations c	orrected for at	tenuation	

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	Attitude	Subjective Social Norm	Subjective Personal Norm	Anticipated Circumstances	CPE Next Year	CPE 3 Years
<pre>% Time in A/V Production (N=292)</pre>	0696 (0738)	0482 (0512)	0740 (0773)	0503 (0555)	0060 -	1086#
% Time in Research (N=292)	.0017 (.0018)	.0278 (.0296)	.0622 (.0650)	0055 (0061)	.0906	.1257*
<pre>% Time in Consul- tation (N=292)</pre>	0403 (0427)	0247 (0263)	.0073 (.0076)	0077 (0085)	.0137	0353
<pre>% Time in Sales- Marketing (N=292)</pre>	.0158 (.0167)	0895 (0951)	0337 (0352)	0306 (0338)	0079	0380
<pre>% Time as Student (N=292)</pre>	.1400** (.1484**)	.1979*** (.2104***)	.1616** (.1688**)	.0486 (.0536)	.1008*	.0983
Years in Employ- ment Role (N=291)	1627** (1724**)	0331 (0352)	0148 (0155)	.0046 (.0051)	1114*	 1523 * *
Salary (N=292)	2340###	0956)(1016)	1145* (1196*)	.0710 (.0784)	1037#	1534##
<pre>< d= ## = b ></pre>	.01 ###=p	>.001 C	orrelations cor	rected for atte	nuation	

Table 4.2 (cont'd)

Hypothesis 2: As the level of formal education completed increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

Two variables, Subjective Social Norm (P =>.1465) and Subjective Personal Norm (P =>.1086) were significantly correlated with the level of formal education completed. The direction of the correlation indicates that as the level of formal education increases, the score on the Subjective Social Norm and Subjective Personal Norm scales will increase.

<u>Hypothesis 3:</u> As the length of time since the last degree was received increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

Four variables were found to correlate significantly with the length of time since the last degree was received. The four variables were Attitude (P => -1518), Subjective Personal Norm (P => -1168), and the measures of intent to participate in continuing professional education within the next

year (P =>-.1553) and the next three years (P =>-.2021). The direction of the correlation indicates that as the length of time since the last degree was received increases, the scores on the Attitude and Subjective Personal Norm scales and the two measures of intent to participate in continuing professional education will decrease.

Hypothesis 4: As the amount of time spent in administration increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

No statistically significant correlations were found at the .05 level between the independent measures and the amount of time spent in administration.

<u>Hypothesis 5:</u> As the amount of time spent in audiovisual production increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

A significant correlation was found between the intent to participate in continuing professional education within the next three years and the amount of time spent in audiovisual production. (P =>-.1086) The direction of the correlation indicates that as the amount of time spent in audiovisual production increases, the intent to participate in continuing professional education will decrease.

Hypothesis 6: As the amount of time spent in consultation increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

No statistically significant correlations were found at the .05 level.

Hypothesis 7: As the amount of time spent in sales promotion increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in professional continuing education within the next three years will decrease.

No statistically significant correlations were found at the .05 level.

<u>Hypothesis 8:</u> As the length of time a respondent has been in his or her employment role increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

The length of time a respondent had been in an employment role was significantly correlated with the Attitude score (P =>-.1724), intent to participate in continuing professional education within the next year (P => -.1114) and intent to participate within the next three years (P =>-.1523) The direction of the correlation indicates that as the length of time a respondent has been in an employment role increases, the scores for the Attitude scale, intent to participate in continuing professional education within the next year and the intent to participate in continuing professional education within the next year and the intent to participate in continuing professional education within the next three years will decrease.

Hypothesis 9: As the salary in the past calendar year increases:

- a. The score on the Attitude scale will decrease.
- b. The score on the Subjective Social Norm scale will decrease.
- c. The score on the Subjective Personal Norm scale will decrease.
- d. The score on the Anticipated Circumstances scale will decrease.
- e. The intent to participate in continuing professional education within the next year will decrease.
- f. The intent to participate in continuing professional education within the next three years will decrease.

Salary was significantly correlated with four measures, Attitude (P => -.2480), Subjective Personal Norm (P => -.1196), intent to participate in continuing professional education within the next year (P => -.1037) and intent to participate within the next three years. (P => -.1534) The direction of the correlation indicates that as salary increases, the scores on each of the measures would decrease.

<u>Hypothesis 10:</u> As the amount of time spent in teaching or training increases: a. The score on the Attitude scale will increase.

- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

The amount of time a respondent spent in teaching or training was significantly correlated with two measures, Attitude (P => .1507) and Subjective Personal Norm. (P => .1605) The direction of the correlation indicates that as the percentage of time spent in teaching or training increases, the scores from the Attitude and Subjective Personal Norm scales will increase.

<u>Hypothesis 11:</u> As the amount of time spent in curriculum or instructional development increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

The amount of time spent in curriculum or instructional development was significantly correlated to one measure, Anticipated Circumstances. (P \Rightarrow .1596). The direction of the correlation indicates that as the the percentage of time spent in curriculum or instructional development increases, the score on the Anticipated Circumstances scale will increase.

<u>Hypothesis 12:</u> As the amount of time spent in library or information service increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

No statistically significant correlations were found at the .05 level.

Hypothesis 13: As the amount of time spent in research increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.

•• -- •

f. The intent to participate in continuing professional education within the next three years will increase.

The percentage of time spent in research was significantly correlated to intent to participate in continuing professional education within the next three years. (P =>.1257) The direction of the correlation indicates that as the percentage of time spent in research increases, the intent to participate in continuing professional education within the next three years will also increase.

Hypothesis 14: As the amount of time spent as a student increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.
- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

The percentage of time spent as a student was significantly correlated with four variables, Attitude (P =>.1484), Subjective Social Norm (P => .2104), Subjective Personal Norm (P =>.1688) and intent to participate in continuing professional education within the next year. (P =>.1008) The direction of the correlation indicates that as the percentage of time spent as a student increases, the scores on the four variables will increase.

<u>Hypothesis 15:</u> As the amount of time spent participating in continuing professional education within the last 3 years increases:

- a. The score on the Attitude scale will increase.
- b. The score on the Subjective Social Norm scale will increase.
- c. The score on the Subjective Personal Norm scale will increase.

- d. The score on the Anticipated Circumstances scale will increase.
- e. The intent to participate in continuing professional education within the next year will increase.
- f. The intent to participate in continuing professional education within the next three years will increase.

The amount of participation in continuing professional education within the last three years was significantly correlated with four measures, Attitude (P =>.1386), Subjective Personal Norm (P =>.1143), intent to participate in continuing professional education within the next year (P \Rightarrow .1353) and the intent to participate in continuing professional education within the next three years. (P =>.1074) The direction of the correlation indicates that as the amount of participation in continuing professional education within the last three years increases, the scores on the four dependent measures will increase.

MULTIPLE REGRESSION ANALYSIS

This section describes the data analysis in which the expectancy-value scales were regressed on the dependent measures intent to participate in continuing professional education within the next year and within the next three years. The dependent variables were measures from the Respondent Information form.

The Subjective Social Norm Scale was to be entered into the equation, but because of to many missing values it was omitted from the analysis. Since the instructions to the respondents for this scale indicated that they should omit any items that were not appropriate to them, the responses had a large number of missing items. However, the scales were not properly

coded to distinguish between those who purposely omitted an item and those who missed the item for other reasons. The result was a large number of missing values. For this reason the scale was omitted from the analysis.

To determine if there was any difference between the regression equations based upon the strata and the equations based upon the full sample used in the study, the forward regression procedure was used to calculate the full regression model, the full regression model plus dummy variables consisting of the scores from the strata and the full model plus dummy variables and their interactions. By entering all of these variables into the regression analysis it was possible to determine if the strata contributed significantly to the regression analysis.

The statistical program used to conduct the analysis was the forward regression procedure from the <u>Statistical Package for the Social Sciences</u>. Once the analysis was completed the F score for each step was computed using the following formula:

$$F = \frac{(R^2 y_{123} - R^2 y_{12})/(k_1 - k_2)}{(1 - R^2 y_{123})/(N - k_1 - 1)}$$

where R^2_{y123} = the larger of the two R^2 scores. R^2_{y12} = the smaller of the two R^2 scores. ^k1 = the number of independent variables of the larger R^2 . ^k2 = the number of independent variables of the smaller R^2 .

N = the total number of cases

Based upon the calculation of F scores (Table 4.3), the regression equations for the strata were not significant. Therefore the regression equation used applies to all participants in the study (N = 296).

Once the regression equation was determined, it was used to measure the intent of participants to participate in continuing professional education within the next year and the next three years (Table 4.4). The results are described below:

INTENT TO PARTICIPATE IN CONTINUING PROFESSIONAL EDUCATION WITHIN THE NEXT YEAR:

The three independent variables, Attitude, Subjective Personal Norm and Anticipated Circumstances were entered into the data analysis. Examination of the beta weights indicated that the variables Attitude (F = 9.966,p > .01) and Subjective Personal Norm (F = 15.586,p > .001) were significant predictors of intent to participate in continuing professional education within the next year. The R square statistic (.2303) indicated that approximately 23% of the total variance was explained by the two variables. After the selection procedure, the regression equation used to predict a persons score is:

Intent = -9.108 + .082 Attitude + .355 Subjective Personal Norm INTENT TO PARTICIPATE IN CONTINUING PROFESSIONAL EDUCATION WITHIN THE NEXT THREE YEARS:

The three independent variables, Attitude, Subjective Personal Norm and Anticipated Circumstances were entered into the data analysis. Examination of the beta weights indicated that the variables Attitude (F = 12.579,p > .001) and Subjective Personal Norm (F = 5.240,p > .05) were significant predictors of intent to participate in continuing professional education within the next three years. The R square statistic (.1672) indicated that approximately 17% of the total variance was explained by

the two variables. After the selection procedure, the regression equation used to predict a persons score is:

Intent = 27.587 = .079 Attitude + .177 Subjective Personal Norm

Table 4.3 Calculation of F Ratios Derived From The Difference Between Regression Models

-

Intent to participate in CPE next year:	r Ratio
Difference between model 3 (Full model, dummy variables & interactions) and model 2 (Full model & dummy variables) =	0.948
Difference between model 2 (Full model & dummy variables) and model 1 (Full model) =	1.7400
Intent to participate in CPE next three years:	
Difference between model 3 (Full model, dummy variables & interactions) and model 2 (Full model & dummy variables) =	0.7800
Difference between model 2 (Full model & dummy variables) and model 1 (Full model) =	1.7200

Dummy Variables:	Z ₁ = Kindergarten - Twelth grade Z ₂ = Junior/Community College Z ₃ = College/University Z ₄ = Business/Industry Z ₅ = Student Z ₆ = Other
Continuous Variables:	<pre>X₁ = Attitude Scale X₂ = Subjective Social Norm Scale X₃ = Subjective Personal Norm Scale X₄ = Anticipated Circumstances Scale</pre>
Full Regression Model:	$Y = B_0 + B_1 Z_1 + B_2 Z_2 + B_3 Z_3 + B_4 Z_4 + B_5 Z_5 + B_6 Z_6 + e$ e = N(0 ₁ \sigma_{\varepsilon}^2)

Vari	able	Unstandardized Regression Coefficient	F	R	R ²
CPE	Next Year ¹				
	Attitude	.082	9.966**	.4799	.2303
	Subjective Personal Norm	• 355	15.586***		
	Anticipated Circumstance	.094	.116		
CPE	Next 3 Years ¹				
	Attitude	.079	12.579***	.4089	.1672
	Subjective Personal Norm	.177	5.240#		
	Anticipated Circumstance	s .056	.055		
1 De	egrees of free	dom = 3 and 190	# p ## p ### p	>.05 >.01 >.001	

Table 4.4 Multiple Regression Analysis for the Intent to Participate in Continuing Professional Education (N = 193)

DISCRIMINANT FUNCTION ANALYSIS

In this section the goal was to find the variables which best distinguish between participants and nonparticipants in continuing professional education. To complete this task discriminant function analysis was selected because this statistical procedure helps to "distinguish between groups based upon a collection of discriminating variables that will measure characteristics on which the groups are expected to differ" (Klecka, 1975, p. 435).

The research question examined in this section was: Research Question: What are the personal and professional variables which distinguish the professional who participates in continuing professional education from the one who does not participate?

The hypothesis to be tested in this section is: <u>Hypothesis 17</u>: There will be a significant difference between participants and nonparticipants on the items representing personal and professional characteristics measured on the Respondent Information form.

The statistical analysis was completed in three stages using the computer program "Discriminant Function Analysis" from the <u>Statistical</u> <u>Package for the Social Sciences.</u> First, the study sample was randomly divided in half to use in generating the discriminant functions. Second, the randomly drawn sample was used to generate the best discriminant functions based upon the variables entered into the computer program. Third, the discriminant functions derived in step two were used to classify the remaining half of the sample which was drawn in step one. Based upon the analysis the discriminant scores were developed which differentiated between the participants and nonparticipants in continuing professional education.

The first stage consisted of drawing a random sample of one-half of the cases available in the study. The sample that was drawn (N = 135) was used to develop the discriminant function equation. The variables from the Respondent Information form were entered into the computer analysis using the "forward" procedure. This procedure is used to determine which variables contribute the largest discriminating ability based upon an F to enter of .001. Because the Subjective Social Norm scale had large amounts of missing values it was decided to not use the scores from the four scales Attitude, Subjective Social Norm, Subjective Personal Norm and Anticipated Circumstances. The variables entered into the analysis were:

- 1. Age.
- 2. Highest level of formal education.
- 3. Hours of continuing professional education within the last three years.
- 4. Number of years since the last degree was received.
- 5. Primary place of employment.
- 6. % of time spent in administration.
- 7. \$ of time spent in teaching or training.
- 8. % of time spent in curriculum or instructional development.
- 9. 5 of time spent in library or information science.
- 10. % of time spent in audiovisual production.
- 11. % of time spent in research.
- 12. % of time spent as a student.
- 13. Number of years in present employment role.
- 14. Salary in the last year.

Stepwise Discriminant Function Analysis					
Variable	Wilks ¹ Lambda	Standardized Discriminant Coefficient			
CPE last 3 years	.9274	.8600**			
% time in Consultation	.9041	. 4130 # #			
% time in Research	.8906	•2714**			
\$ time in Curriculum/ID	.8787	3713**			
Years since degree was received	.8711	•4569**			
Years in employment role	.8597	3534**			
% time in Library	.8520	2542**			

Table 4.5 Disciminant Function Analysis for Participation in Continuing Professional Education (N = 135)

1 Degrees of freedom = 1 and 133 ** = p > .01 After the computer program was completed, the following variables remained (Table 4.5):

- 1. Age
- 2. % of time spent in consultation.
- 3. % of time spent in research.
- 4. \$ of time spent in curriculum or instructional development.
- 5. Number of years since the last degree was received.
- 6. Number of years in present employment role.
- 7. % of time spent in library or information science.

The final stage of the discriminant function analysis consisted of predicting a respondent's likelihood of being a participant or nonparticipant based upon the respondent's discriminant score (Table 4.6). The discriminant score was derived by scoring the respondent's response to each variable used in the discriminant function equation. Based upon the discriminant scores, respondents were categorized as participants or nonparticipants. The statistically derived classification was then compared to the actual category chosen by the respondent on the Respondent Information form. This analysis was completed using the cases remaining (N = 138) after the initial sample selection was made at the first stage of the analysis. Of the 138 participants in the analysis, 96 or 95% were correctly classified as participants based upon their discriminant score. Of the 37 nonparticipants in the sample, only 9 or 24.3% were correctly classified as nonparticipants based upon their discriminant score. Sixteen respondents were unclassified between the two samples. Overall, 76.09% of the respondents were correctly classified.

	Tab	le	, L	1.6				
Group	Members	hi	p	Cla	ass	sif	ied	by
Discr	iminant	Fυ	inc	eti	on	Ana	alys	sis
	(N	=	13	38)			-	

Actual Group	Predict	ted Group
	Participants	Nonparticipants
Participants (N = 101) Nonparticipants (N = 37)	96 (95 %)	5 (5 %)
	28 (75.7%)	9 (24.3 %)

SUMMARY OF DATA ANALYSIS

This section summarizes the results of the analysis of the four scales and the Respondent Information form used to study the hypotheses examined in this study. The results of the data analysis are listed in Table 4.7.

Hypo- Thesis	Dependent Variable	Independent Variable]	Result: Data Ana	s of alysis
1	Age	Attitude SSN SPN AC Intent-next Intent-next	year 3 year:	Sign. N.S. N.S. N.S. Sign. s Sign.	**
2	Level of formal education	Attitude SSN SPN AC Intent-next Intent-next	year 3 year:	N.S. Sign. Sign. N.S. N.S. S N.S.	**
3	Length of time since degree was received	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	Sign. N.S. Sign. N.S. Sign. s Sign.	** * **
4	Amount of time spent in administration	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	N.S. N.S. N.S. N.S. N.S. s N.S.	

		Table	e 4.7	7		
Summary	of	Correlati	ion,	Multi	iple	Regression
and	Disc	riminant	Anal	Lysis	Нурс	theses

#=p >.05
##=p >.01
###=p >.001

Hypo- Thesis	Dependent Variable	Independent Variable	D	Results of ata Analysis
5	Amount of time spent in audio- visual production	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	N.S. N.S. N.S. N.S. Sign. *
6	Amount of time spent in consultation	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	N.S. N.S. N.S. N.S. N.S. N.S.
7	Amount of time spent in sales/ marketing	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	N.S. N.S. N.S. N.S. N.S.
8	Length of time in employment role	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	Sign.## N.S. N.S. N.S. Sign.# Sign.##

#=p >.05
##=p >.01
###=p >.001

Hypo- Thesis	Dependent Variable	Independent Variable	I	Results of Data Analysis
9	Salary in past year	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	Sign. *** N.S. Sign.* N.S. Sign.* Sign.**
10	Amount of time in teaching/training	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	Sign. ** N.S. Sign. ** N.S. N.S. N.S.
11	Amount of time in curriculum/ instructional development	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	N.S. N.S. N.S. Sign.## N.S. N.S.
12	Amount of time in library/information service	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	N.S. N.S. N.S. N.S. N.S. N.S.

#=p > .05
##=p > .01
###=p > .001

Amount of time in research Amount of time as	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	N.S. N.S. N.S. N.S. N.S. s Sign.#
Amount of time as			
a student	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	Sign.** Sign.*** Sign.** N.S. Sign.* N.S.
Amount of time spen participating in CPE within last 3 years	Attitude SSN SPN AC Intent-next Intent-next	year 3 years	Sign.# Sign. Sign.# N.S. Sign.# Sign.#
Intent to participate in CPE next year			
CPE-next year	Attitude SPN AC		Sign.** Sign.*** N.S
	mount of time spen articipating in PE within last 3 ears ntent to articipate in CPE ext year PE-next year	AC Intent-next Intent-next Intent-next articipating in PE within last 3 rears Attitude SSN SPN AC Intent-next Intent-next Intent-next Intent-next PE-next year Attitude SPN AC AC Intent-next Intent-next AC Intent-next Intent-next AC AC AC AC AC AC AC AC AC AC	AC Intent-next year Intent-next 3 years mount of time spent articipating in PE within last 3 ears Attitude SSN SPN AC Intent-next year Intent-next 3 years ntent to participate in CPE bext year PE-next year AC

#=p > .05
##=p > .01
###=p > .001

Hypo- Thesis	Dependent Variable	Independent Variable	Results of Data Analysis
16			
10	CPE-next 3 years	ACC	Sign.# Sign.# N.S.
17	Participants/non participants	Age Level of Education When degree was received Hours of CPE taken last 3 years Employment categor Administration Teaching Curriculum Library AV Production Research Consultation Sales Student Years employment Salary	N.S. N.S. Sign.** y N.S. N.S. N.S. Sign.** Sign.** Sign.** Sign.** N.S. Sign.** N.S. N.S. Sign.**

Table 4.7 (cont'd)

= p > .01

CHAPTER SUMMARY

This chapter has presented the analysis of the data collected from members of the Association for Educational Communications and Technology. Using correlation analysis, the relationship was examined between the personal and professional respondent's characteristics. the expectancy-value scales and the intent to participate in continuing professional education. Multiple regression was used in another section as the means to describe the relationship between the scores on the expectancy-value scales and the participant's intent to participate in continuing professional education within the next year and the next three years. The next section utilized discriminant analysis techniques to analyze variables that were able to divide respondents into either of two categories, participant or nonparticipant, based upon their empirically derived The final section summarized the results of the discriminant score. research by listing each hypothesis examined in the study and the outcome based upon the statistical analysis.

CHAPTER FIVE: CONCLUSIONS AND DISCUSSION OF THE RESULTS

INTRODUCTION

This research study was begun in order to examine a variety of questions about the nature of participation in continuing professional Three primary issues were examined. The first was whether education. there were any correlations between selected personal and professional characteristics of the respondent's and their scores on the expectancy-value scales in addition to two measures of intent to participate in continuing professional education. The second goal was to examine the effectiveness of Fishbein's expectancy-value model in predicting whether a professional will participate in continuing professional education. The third issue centered around whether there are variables which could be used to distinguish between participants and nonparticipants in continuing professional education.

To examine these issues, members of the Association for Educational Communication and Technology were randomly sampled to determine how they would score on the variables examined in the study. Three statistical measures were used to examine the data: correlation analysis, multiple regression analysis and discriminant function analysis. The results of the data analysis were described in the last chapter.

This final chapter will summarize and review the outcomes of the study. The discussion of the results is divided into three sections based upon the statistical measure used. The final portion of the chapter will include recommendations for further research.

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 $(\mathbf{r}_{1},\mathbf{r}_{2},$

 $\epsilon = 1.4$. ξ

RESEARCH CONCLUSIONS

The following conclusions are based on a review of the data described in chapter four:

- 1. The respondent's scores on the Attitude scale were positively correlated with the amount of time spent participating in continuing professional education within the last three years, the amount of time spent in teaching or training and the amount of time spent as a student.
- 2. The respondent's scores on the Attitude scale were negatively correlated with the age of the respondent, the length of time since the last degree was received, the number of years in the present employment role and salary in the past calendar year.
- 3. The respondent's scores on the Subjective Social Norm scale were positively correlated with the level of education completed by the respondent and the amount of time spent as a student.
- 4. The respondent's scores on the Subjective Personal Norm scale were positively correlated with the level of education completed by the respondent, the amount of participation in continuing professional education within the last three years, the amount of time spent in teaching or training and the amount of time spent as a student.
- 5. The respondent's scores on the Subjective Personal Norm scale were negatively correlated with the number of years since the last degree was received and the respondent's salary in the past calendar year.
- 6. The respondent's scores on the Anticipated Circumstances scale were positively correlated with the amount of time spent in curriculum or instructional development.
- 7. The respondent's intent to participate in continuing professional education within the next year were positively correlated with the

-parameters of the second constants of $\mathbf{c}^{(1)}$, and $\mathbf{c}^{(2)}$, and $\mathbf{c}^{(2)}$, and $\mathbf{c}^{(2)}$, $\mathbf{c}^{(2)}$, and $\mathbf{c}^{(2)}$, $\mathbf{c}^{(2)$

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amount of time spent participating in continuing professional education within the last three years and the amount of time spent as a student.

- 8. The respondent's intent to participate in continuing professional education within the next year were negatively correlated with the age of the respondent, the level of education completed, the number of years in the existing employment role and the salary in the past calendar year.
- 9. The respondent's intent to participate in continuing professional education within the next three years were positively correlated with the number of hours spent participating in continuing professional education within the last three years and the amount of time spent in research.
- 10. The respondent's intent to participate in continuing professional education within the next three years were negatively correlated with the age of the respondent, the length of time since the last degree was received, the amount of time spent in audiovisual production and the number of years in the present employment role.
- 11. The variables Attitude and Subjective Personal Norm were significant predictors of a respondent's intent to participate in continuing professional education within the next year.
- 12. The variables Attitude and Subjective Personal Norm were significant predictors of a respondent's intent to participate in continuing professional education within the next three years.
- 13. Seven personal and professional variables were able to significantly differentiate between participants and nonparticipants using the discriminant analysis procedure. They included the number of continuing professional education hours participated in within the last three years, the amount of years since the last degree was received,

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the amount of time spent in curriculum or instructional development, the amount of time spent in consultation, the amount of time spent in research, the amount of time spent in library or information service and the length of time a person has been in the existing employment role.

20. Using the discriminant analysis technique, the ability to correctly identify respondent's who <u>will</u> participate in continuing professional education is much greater than the ability to predict those respondents who will not participate.

DISCUSSION OF THE RESULTS

The discussion of the results that emerged from the research study will be examined in three sections, based upon the statistical technique used. The first section presents the discussion of the correlation hypotheses.

CORRELATION OF PERSONAL AND PROFESSIONAL CHARACTERISTICS WITH THE EXPECTANCY-VALUE SCALES AND INTENT TO PARTICIPATE IN CONTINUING PROFESSIONAL EDUCATION

Expectancy-Value Scales:

The Attitude scale was developed to measure a respondent's views on the consequences that might result from participation in continuing professional education. Each item on the scale is rated on two criteria; (1) the value the respondent places on the item, and (2) how likely the item is to occur if participation would take place. The results of this study suggest that as age, the amount of time since the last degree was received, the number of years in the present employment role and salary increase, the score on the Attitude scale will decrease. The exact reasons for the results are not clear. However, it may be that the attitudes expressed in this scale are ones that develop as a result of length of time in the profession. The variables with a negative correlation with the Attitude scale are primarily functions of longevity in a professional role. It would appear that as a person spends more time in a job, some type of shift may occur in the thinking of the professional which reduces the need and desire for participation in continuing professional education. Further research is needed to examine if this shift in attitude occurs with other professional populations, and if so, why.

The Subjective Personal Norm scale was developed to measure a respondent's belief's about continuing professional education and how willing the professional is to act on those belief's. Since the results of this scale closely mirror the outcomes from the Attitude scale, it is likely that participation is again linked to longevity in an employment role. A respondent could place high value on a particular belief, but be unwilling or unable to respond to the belief because of impediments placed in front of the person as a result of increased demands placed upon the respondent. Thus the score on the Subjective Personal Norm scale would be reduced.

Only two items were significant for the Subjective Social Norm scale. The level of education completed and amount of time spent as a student are the only measures that were significant, but inversely related to the Subjective Social Norm score. Since this scale measures a respondent's perception of the expectations of others and how important their views are, it appears that more study should be done concerning why these two variables of all the others were the only ones to correlate with the scale.

Future research should examine how strongly respondent's are affected by the concerns expressed or implied by persons significant to the professional.

The results from the Anticipated Circumstances scale indicate that as a person increases the amount of time spent in curriculum or instructional development, the score on the Anticipated Circumstance scale will increase. This implies that those respondents who had high scores on this scale were aware of how circumstances may affect their participation level. Further research needs to be done to determine if this variable, or another may have differential influence on a persons participation. A factor analysis would help to determine the underlying components of how different employment roles may vary in terms of what circumstances affect participation.

Professional Characteristics:

Those hypotheses that dealt with a respondent's professional characteristics and how they affect a person's intent to participate in continuing professional education were largely confirmed by the results of the research. The variables age, length of time since the last degree was received, length of time spent in the present employment role and salary in the past calendar year were negatively correlated with a respondent's intent to participate in continuing professional education.

There are a variety of possibilities to explain the results. First, the <u>type</u> of continuing education pursued by respondent's with these professional characteristics may be different in nature from those pursued by the other respondent's. More emphasis may be given to education in the form of reading or informal professional contacts. Since this study emphasized formal educational learning, the educational activities of respondent's with these characteristics may not have been properly represented.

Another possibility is that the characteristics of age, length of time in

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an employment role and the other variables are actually measures of job involvement. As a person increases in age it is very likely that the level of employment responsibility will increase. As responsibilities increase, the amount of time available for participation in continuing education is likely to decrease. Thus intent to participate may be decreased.

A third alternative is that as a respondent spends time in a specific employment role, the knowledge and skills necessary to complete the tasks for that job may be acquired. Although sporadic training may be needed, there would be less impetus to pursue continuing education on a regular basis. The intent to participate in continuing professional education would be reduced.

These results suggest that further study needs to be made of how job involvement and employment responsibilites affect intent to participate. By focusing on those variables that are related to longevity in a job, it may be possible to discover why participation in continuing professional education appears to decrease over time.

Employment Responsibilities:

The variables related to employment responsibilities yielded few significant results. Only two variables, amount of time spent in research and amount of time spent as a student, were correlated with intent to participate in continuing professional education. The correlation, though significant and positive, was not large.

Since one of the goals for this research was to assist those who would market continuing education programs to nonparticipants, the outcomes related to employment responsibilities were not encouraging. These variables would have been relatively easy groupings on which to target a message for continuing education. The reasons for the outcomes are not clear, but they

may be related to the professional characteristic correlations described earlier.

If the professional characteristics of age, length of time in an employment role and the other characteristics are important features of reduced participation in formal education opportunities, then it is likely that these characteristics are randomly distributed across all the employment responsibilities. However, upon examination of the respondent's characteristics (Table 4.1), the young age of the respondent's and their limited time in their job stands out. It appears that because the respondents have not held their employment position for a long time, many of the features of employment longevity may have not had time to surface. If the same survey was completed in another ten years, the results may be stronger because of the relationship between length of time in a job and employment responsibility.

Attitude-Behavior Correlation:

Hypothesis 15 was concerned with the relationship between behavior and attitude. By measuring a respondent's intent to participate in continuing professional education and the actual level of participation, the role of attitude and behavior could be compared. The results indicate that there is a significant, positive correlation between the two factors. However, the strength of the correlation is not high enough to draw any firm conclusions other than that a correlation exists. Further analysis is needed to examine the variables that may increase the correlation between these two variables.

<u>MULTIPLE REGRESSION ANALYSIS TO MEASURE RESPONDENT'S</u> <u>INTENT TO PARTICIPATE IN CONTINUING PROFESSIONAL</u> <u>EDUCATION</u>

Because the Subjective Social Norm scale was omitted from analysis it was not possible to examine all elements of Fishbein's expectancy-value model. However, two of the three components of the model were able to predict the intent to participate in continuing professional education. The R square scores indicate that the Attitude and Subjective Personal Norm scales were able explain approximately 23% of the variance in the intent to participate within the next year and 17% of the variance in the intent to participate within the next three years.

With the missing scale it was not possible to determine if Fishbein's model could have been more effective. However, based upon the scores from the existing scales it would appear that the addition of another scale may not have made a large difference in the overall variance accounted for.

At least two reasons may exist for the outcomes reported in this study. First, the instruments used to measure the respondent's Attitude, Subjective Social Norm, Subjective Personal Norm and Anticipated Circumstances scores may not have reflected the norms held by the population from which the sample was selected. Though this is possible, special care was taken in creating the instruments to use a sample of the respondent's (n=50) to generate the instrument items. The items were also verified by a second sample of the population (n=50) who commented on the applicability and clarity of the items. These steps were taken prior to conducting the final sample of the population. These precautions should have minimized the possibility of non-representative test items.
Another possibility is that the model still does not account for all the variables that affect a person's behavior. One of the goals of adding the Anticipated Circumstances scale was to expand the model to include situations which may impinge on a respondent's intent to participate in continuing education. Based upon the results it is clear that the scale was not an important contributor to the prediction of intent.

How the expectancy-value model can be improved is unclear, for the thrust of the model has been to incorporate those variables which would combine the multitude of variables which are likely to affect a persons behavior. Consideration needs to be given to other variables which may need to be added to the model to increase its precision.

DISCRIMINANT ANALYSIS TO DISTINGUISH BETWEEN PARTICIPANTS AND NONPARTICIPANTS IN CONTINUING PROFESSIONAL EDUCATION

One of the goals of this study was to distinguish between participants and nonparticipants so that educational program developers could reach out to those professionals who would normally participate minimally in educational activities. The goal of reaching the nonparticipant was only partially achieved. The discriminant function analysis was very effective in categorizing those who were participants, but was marginally effective with nonparticipants (Table 4-7).

It appears that nonparticipation still has not yielded its roots. Previous research has failed to elucidate the reasons for nonparticipation and this study had similar results. The present study found that the strongest contributors to the discriminant score was the amount of previous participation in continuing professional education. This would support the adage that people continue doing what they have always done in the past. The problem remains that this omits those who have not participated in the past.

In future research, consideration should be given to the correlation between past participation and future participation. In addition, further study may be needed in how different types of anticipated circumstances may affect a persons intent to participate in continuing professional education. In the latter case, a factor analysis may be used on the existing Anticipated Circumstances scale to determine if different types of respondent's yield different scores.

RECOMMENDATIONS FOR FUTURE RESEARCH

A number of recommendations have already been made for further research. In this section the recommendations will be restated and additional suggestions made.

- 1. Research needs to be done on the relationship between job involvement and participation in continuing professional education. The focus should be on variables related to length of time in a job, to determine each variables impact on participation.
- 2. A followup survey of the profession would be valuable to see if the association membership changes in any significant manner. Because of the large number of members who entered the marketplace during the baby boom era of the 1960's, it is likely that the membership in AECT will shift to older members over time, which may result in fewer members participating in continuing education activities.
- 3. Further research is needed using the Anticipated Circumstances scale. Though the scale was generally ineffective as a predictor of intent to

participate in continuing professional education, further research should examine how different employment characteristics affect the score on the scale, possibly using factor analysis.

- 4. Further research is needed with Fishbein's expectancy-value model. The results of this study suggest the model does not account for the diversity of variables that affect participation. Consideration should be given to other variables that may enhance the model as well as testing the model on another professional population.
- 5. Nonparticipation by professionals in continuing education needs additional research. The variables that affect nonparticipation are not yet clear. Further research needs to be completed to examine the roots of nonparticipation.

CHAPTER SUMMARY

This study was begun to analyze three basic questions:

- 1. What are the personal and professional characteristics which correlate with a professionals intent to participate in continuing professional education?
- 2. How effective is the modified Fishbein expectancy-value model in predicting a professionals intent to participate in continuing professional education?
- 3. What are the personal and professional variables which distinguish the professional who participates in continuing professional education from the one who does not participate?

Using three statistical methods, correlation, regression and discriminant Function analysis, the questions have been examined for a sample of members from the Association for Educational Communications and Technology. The results indicated that there are personal and professional characteristics that correlate with the intent to participate in continuing professional education. The also showed that Fishbein's expectancy-value model is partially successful in explaining the variance related to intent to participate in continuing professional education. Finally, the study was able to generate variables which were effective at classifying those who were participants, but was less successful with nonparticipants.

The study was an attempt to analyze a phenomenon which is beginning to be examined in more depth. The issues of participation and nonparticipation in continuing professional education are issues that are not likely to disappear in the near future. The hope is that this study has contributed to the body of knowledge which examines the phenomenon.

GLOSSARY OF TERMS

- <u>Adult Education</u>: Any process by which men and women, either alone or in groups, try to improve themselves by increasing their knowledge, skills or attitudes. (Good, 1973)
- <u>Attitude</u>: A learned disposition to respond in a consistently favorable or unfavorable manner with respect to the concept of professional continuing education. (Fishbein, 1975)
- <u>Belief</u>: Hypotheses related to a professional's subjective personal norms and subjective social norms and the professional's motivations to comply with these hypotheses. (Fishbein, 1975)
- <u>Consequence</u>: The attributes of a behavior as perceived by an individual. (Fishbein, 1975)
- <u>Continuing Professional Education</u>: Educational opportunities available to a professional to be used to update and supplement existing skills and knowledge. Participation requires that an external source (such as an organization or another qualified individual) monitor the learning of the professional in order to validate the experience. (Waldon, 1984)
- Evaluation: A term used to incorporate ratings on each semantic differential scale, the products obtained by multiplying the ratings of the two scales for each item, and/or the summation of the total products for each section. (Fishbein, 1975)
- A measure dependent on the sum of an individual's attitude toward a behavior (such as participation in continuing professional education) and the personal and social norms regarding this behavior. (Fishbein, 1975)

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- <u>Nonparticipant</u>: A professional who has not taken part in any continuing professional education within the last three years. (Waldon, 1984)
- <u>Overt Behavior</u>: Actual participation in some form of continuing education over time. (Southern, 1980)
- <u>Subjective Personal Norm</u>: The individuals belief about whether he or she should behave in a certain way, such as participating in continuing professional education, and the motivation of the individual to comply with this personal belief. (Fishbein, 1975)

APPENDIX A

EXPECTANCY-VALUE SCALES: ATTITUDE, SUBJECTIVE SOCIAL NORM, SUBJECTIVE PERSONAL NORM AND ANTICIPATED CIRCUMSTANCES

ATTITUDE SCALE:

In the following section we focus on different consequences that might result from participation in continuing professional education. For each of the consequences first indicate the value you place on the consequence; second please indicate how likely you think it would be for the consequence to occur if you were to participate in continuing professional education.

Answer by placing an X on the line that represents your view on the two scales for each consequence. If you consider the questions to be neutral on the scale, then you should place your X in the middle space.

Continuing professional education will:

- 1. Allow me to interact with professional colleagues.
- 2. Help me increase my professional knowledge.
- 3. Improve my professional skills and techniques.
- 4. Make me work overtime to complete other responsibilities.
- 5. Be too expensive for me to afford.
- 6 Give me emotional and psychological support.
- 7. Help improve my future employment prospects.
- 8. Improve my effectiveness as a professional.
- 9. Help me get a salary increase.
- 10. Allow me to have practical experiences.
- 11. Increase my job satisfaction.
- 12. Stimulate me to use different approaches at work.
- 13. Enhance my personal growth.
- 14. Increase my enthusiasm at work.
- 15. Help my employer recognize my desire to improve the quality of my work.
- 16. Disrupt my work schedule.
- 17. Challenge my intellectual abilities.
- 18. Help me get a promotion.
- 19. Help break the monotony of my work.
- 20. Increase my professional visibility.

Wigh Value _____ No Value Likely _____ Unlikely High Value _____ "to Value Likely _____ Unlikely Migh Value _____ % Value Hign Yalue _____ No Value Likely _____ Unlikely High Value _____ No Value Likely _____ Unlikely High Value _____ No Value Likely _____ Unlikely Nigh Value _____ '.o .a'.e Likely _____ High Value _____ to Value Likely _____ High Value _____ 's .s'.e Likely ________ Hign Jaille _____ in Laille Likely _______________________ High Value _____ No Value -'kely _____.nl'kely -typ (alue _____ ic .alue -ign value _____ to value Likely _____ Unlikely Nigh Value _____ No Value Likely _____ Unlikely High Value _____ % Value Likely _____ Unlikely High Value _____ %o Value Likely ______ interest High Value _____ 10 /s'.e Likely _____-High Value _____ "0 /alue Likely _____ Unlikely High Value _____ No Value Likely _____ Unlikely High Value _____ No Value Likely _____ Unlikely

SOCIAL NORM SCALE:

Participation in continuing professional education depends in part on a person's perception of the expectations of other people and the importance placed on those expectations. Types of people who might hold such expectations for you as a professional are given in each set of items below.

Do not complete items inappropriate for your situation. There may be other reference person(s) not listed who may affect your participation in continuing professional education. For this purpose an extra set of items is included at the end of the scale for you to fill in and rate.

For each set of items below, place an X on the appropriate line.

My Immediate Supervisor:

Thinks I should participate _____ Thinks I should not participate

In general, how important is it to you what your immediate supervisor thinks about your participation in continuing professional education?

Very Important _____ Not Important

Educational Technology peers at my institution/company:

Think I should participate _____ Think I should not participate

In general, how important is it to you what your peers at your institution/ company think about your participation in continuing professional education?

Very Important _____ Not Important

Educational Technology peers at other institutions/companies:

Think I should participate Think I should not participate

In general, how important is it to you what peers at other institutions/ companies think about your participation in professional continuing education?

Very Important _____ Not Important

Other colleagues at my institution/company:

Think I should participate _____ Think I should not participate

In general, how important is it to you what other colleagues at your institution/ company think about your participation in continuing professional education?

Very Important _____ Not Important

My Spouse:

Thinks I should participate _____ Thinks I should not participate

In general, how important is it to you what your spouse thinks about your participation in continuing professional education?

Very Important _____ Not Important

I, myself:

Think I should participate _____ Think I should not participate In general, how important is it that you participate in continuing professional education?

Very Important _____ Not Important

My Family:

Thinks I should participate _____ Thinks I should not participate In general, how important is it to you what your family thinks about your participation in continuing professional education?

Very Important _____ Not Important

My Professional Organization(AECT):

Thinks I should participate _____ Thinks I should not participate

In general, how important is it to you what AECT thinks about your participation in continuing professional education?

Very Important _____ Not Important

Former or Present Instructors:

Think I should participate _____ Think I should not participate

In general, how important is it to you what your former or present instructors think about your participation in continuing professional education?

Very Important _____ Not Important

Professional Clients:

Think I should participate _____ Think I should not participate

In general, how important is it to you what your professional clients think about your participation in continuing professional education?

Very Important _____ Not Important

My Students:

Think I should participate _____ Think I should not participate In general, how important is it to you what your students think about your participation in continuing professional education?

Very Important _____ Not Important

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Think I should participate _____ Think I should not participate In general, how important is it to you what ______ thinks about your participation in continuing professional education?

Very Important _____ Not Important

Respondent #:____

PERSONAL NORM SCALE:

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Whether a professional will participate in continuing professional education depends in part on his or her perceptions of what he or she should do and to what extent the professional is willing to act on those beliefs.

For each item below, mark an X on the appropriaté line.

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Do you personally believe you should participate in continuing professional education:

1.1	Throughout your professional life?	
1.2	To what extent are you willing to act on this belief? ,	
2.1	To maintain contact with other professionals?	
2.2	To what extent are you willing to <u>act</u> on this belief?	1
3.1	To maintain your competence as a professional?	
3.2	To what extent are you willing to <u>act</u> on this belief?	
4.1	Because it is important to be continually learning?	
4.2	To what extent are you willing to <u>act</u> on this belief?	V
5.1	In order to advance the profession?	
5.2	To what extent are you willing to <u>act</u> on this belief?	V W
6.1	To keep up with changing knowledge and technology?	
6.2	To what extent are you willing to <u>act</u> on this belief?	Ve Mi
7.1	To advance the state of the art?	
7.2	To what extent are you willing to <u>act</u> on this belief?	Ve Tat
8.1	In order for you to advance in the profession?	
8.2	To what extent are you willing to <u>act</u> on this belief?	Ye ai
9.1	To work with other professionals on common problems?	
9.2	To what extent are you willing to <u>act</u> on this belief?	Ve Wi
10.1	To contribute your knowledge to other professionals?	
10.2	To what extent are you willing to <u>act</u> on this belief?	Ve

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Respondent #:_____

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ANTICIPATED CIRCUMSTANCES SCALE:

A variety of circumstances might impinge on a professional's intention to participate in continuing professional education activities. Below are a variety of circumstances that might affect your intention to participate. Please rate each reason by placing an X on the line that represents your view of how likely that circumstance is to prevent you from participating in continuing professional education.

1.	I am too busy to attend.	Likely	Inlikely
2.	It is too expensive to attend.	Likely	
3.	The available options are inappropriate to my needs.	Likely	*** <e`;< td=""></e`;<>
4.	Family responsibilities limit my involvement.	Likely	Unlikely
5.	Available courses or seminars are too far away.	Likely	
6.	Ny employer does not encourage participation in continuing professional education.	Likely	Jnlikely
7.	I have no desire to attend.	_1xei/	Jelikely
8.	The available options are too theoretical.	likely	intikely
9.	The available options are not theoretical enough.	Likely	
10.	The courses have too narrow a focus, given the complexity of the problems I face.	Likely	Jn14kely
11.	The available options are not relevant to my career goals.	Likely	
12.	The available options are too focused on media/ production skills.	Likely	inlikely
13.	There are no clear monetary benefits for participating.	Likely	Unlikelj
14.	My employer does not reimburse me for participating.	Likely	Unlikely
15.	Available opportunities are irrelevant to my job needs.	Likely	
16.	I lack adequate transportation.	Likely	Unlikely

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APPENDIX B

RESPONDENT INFORMATION FORM

RESPONDENT INFORMATION FORM:

This form is designed to obtain descriptive data which will improve our knowledge about participation in continuing professional education. Most responses require only an X on the appropriate line. Others require you to write a short response. All responses will be kept confidential. Thank you for your assistance.

- 1. Your age? years.
- 2. What is the highest level of formal education you have completed?
 - High School Associate degree Bachelor's degree Master's degree Doctor's degree(Ph.D.HD) Other (specify)
- 3. When did you receive your last degree? (year).
- 4. List the number of clock hours spent in continuing professional education (full time or part time) in recent years. To estimate time, use the following conversion factors:
 - 1 quarter hour=10 clock hours
 - 1 semester hour=15 clock hours

HOURS SPENT

Full-time		Part-time
	198 1	
	1980	
	1979	
	1978	
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- 5. How likely are you to attend any continuing professional education activity:
 - Within the next year_____% Likelihood Within the next 3 years % Likelihood
- Yes, I would like to receive a copy of the results of this survey

- 7. Which of the following represents your primary place of employment?
 - K-12(including administration) Junior/Community College College/University Business/Industry Student Other (specify)
- 8. List the percentage(%) of time you spend in the following employment responsibilities(100% total):
 - Administration Teaching/Training Curriculum/Instructional Development Library/Information Service
 - Audiovisual Production
 - Research
 - Consultation
 - Sales Promotion/Marketing
 - Student
- How many years have you been in your present employment role? years.
- 10. For the past calendar year, indicate approximately what has been your total cash compensation?

Under \$1	10,000
\$10.000	- 14,999
\$15,000	- 19,999
\$20,000	- 24,999
\$25,000	- 29,999
\$30,000	- 34,999
\$35,000	- 39,999
\$40,000	- 44,999
\$45,000	- 49,999
\$50,000	and over

APPENDIX C

COVER LETTER TO ACCOMPANY QUESTIONNAIRE

MICHIGAN STATE UNIVERSITY

OFFICE OF MEDICAL EDUCATION RESEARCH AND DEVELOPMENT - FIR HALL BAST LANSING . MICHIGAN . 48824

May 3, 1982

Dear AECT member,

In conjunction with the Continuing Education Committee of the Association for Educational Communications and Technology, a study is being conducted to examine participation in continuing professional education. Using a model employed in consumer research, this study will help to understand the reasons why members of AECT participate in continuing professional education.

An important part of this study is an examination of professionals who do not regularly participate in continuing professional education. Therefore if you have not participated in any continuing education activities over the last few years we would especially encourage your participation.

In order to facilitate a common understanding of what continuing professional education is, the following definition is offered for guidance of this study:

Educational opportunities available to a professional to be used to update and supplement existing skills and knowledge. Participation requires that an external source(such as an organization or another qualified individual) monitor the learning of the professional in order to validate the experience.

Thus courses, workshops, seminars and self-study materials which are monitored by an instructor or organization(university, business, AECT, etc.) will be included in the definition while the reading of books and journals as well as informal conversations with professional colleagues will be excluded.

Please return the questionnaire as quickly as possible. A stamped, addressed envelope is enclosed to make the return easy. We will not bother you with any more questionnaires, but will send you a summary of the results if you indicate your interest on the questionnaire.

Sincerely,

Dary Walde

Gary Waldon Project Director

Jerrold Kamp Chairperson Continuing Education Committee

MSU is an Affirmative Action/Equal Opportunity Institution

APPENDIX D

POWER ANALYSIS COMPUTATION

POWER ANALYSIS COMPUTATION

Cohen's power analysis procedure is performed prior to a study to identify the type II error tolerated for the study. A type II error is is the probability of accepting a hypothesis when it is in fact, false. By specifying the procedure, the level of type II error is not only indicated, but the researcher can use power analysis to determine the sample size needed for a given level of power. Below, the procedure for selecting the power and sample size are described for the present study.

There are four factors involved in power analysis:

1. The significance criterion, α .

"This is the familiar criterion for rejecting the null hypothesis and equals the probability of a type I error." (Cohen, 1983,p.1)

2. The population "effect" size, (gamma).

This is the general measure of the degree to which the null hypothesis is false. Power, as used in this procedure, increases as gamma, the degree to which H_{c} is false, increases.

3. Power, or $1-\beta$.

Power is the probability of rejecting H_0 for a given significance criterion.

4. The sample size, N.

The size of a sample directly affects the accuracy of the other factors in power analysis. If all factors are equal, error decreases and power increases as N increases. This factor was the primary reason for using power analysis. By specifying the first three factors the sample size for the research can be determined. Modifications of these basic factors allow the sample size to be determined for a specific statistical procedure. For this study the procedure for the multiple regression analysis was the basis for the selection of the sample size.

Cohen's sample size procedure for multiple regression requires that the following values be prespecified:

U, or the number of variables examined, equals 5. R^2 was estimated at .40. In this case, it is equivalent to the effect size, gamma. a, or the possibility of Type I error was set 0.05

Power was set at .80

Based upon these values the following calculation was done using the power analysis procedure:

$$N = \frac{L(1 - R^2)}{R^2} + u + 1$$

$$N = \frac{12.83(.60)}{.40} + 5 + 1$$

N = 19 + 6

N = 25 respondents needed for each strata

This number of respondents was the minimum needed for the values specified. Because the number of respondents in each strata varied in the

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study population, the power of the results varied also. However, based upon this procedure the results will attain this minimum level of significance. and the second second second second second second

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