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RELATIONSHIPS BETWEEN MOTIVATIONAL ORIENTATIONS AND
PARTICIPANTS' PERCEPTIONS OF AN ELECTRONIC
DISTANCE EDUCATION LEARNING ENVIRONMENT

by

Charles Wynn Wilkes

A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF EDUCATION

in

Instructional Technology

Approved:

UTAH STATE UNIVERSITY
Logan, Utah
1989

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C. Wynn Wilkes

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ABSTRACT

Relationships Between Motivational Orientations and
Participants' Perceptions of an Electronic
Distance Education Learning Environment

by

Charles Wynn Wilkes, Doctor of Education
Utah State University, 1989

Major Professor: Dr. Byron R. Burnham
Department: Instructional Technology

The purpose of this study was to investigate the relationships between students' motivational orientations and their perceptions of an electronic distance education (EDE) environment. Subjects were 156 participants (81 women, 75 men; 83 undergraduates, 73 graduate students) enrolled in Utah State University's electronic distance education system, Com-Net.

A comparison group was also utilized, that consisted of 85 participants (64 females, 21 males; 34 undergraduates, 51 graduates) from rural Utah enrolled in Utah State University extension programs. These students were from seven classes which were taught by the traditional method with an instructor physically present.

Correlation coefficients were computed to test the hypotheses of this study. The independent variables (motivational orientations), as measured by Boshier's Education Participation Scale, were correlated with the dependent variables (satisfaction, material environment, involvement, and extension) as measured by the Learning Environment Inventory and the College and University Classroom Environment Inventory. One-way analyses of variance were computed to explore possible relationships with independent variables not included in the original hypotheses. Multiple regression analysis was used with satisfaction as the independent variable to look for possible explanations of student satisfaction.

The participants in this study differ significantly from the norms in their motivational orientations in the areas of professional advancement and cognitive interest. Although the null hypotheses were rejected the relationships were weak, and there appears to be little practical relationship between motivational orientations and participants' satisfaction.

These results suggest that participant satisfaction is largely independent of initial motives that impel individuals to participate. Motivational orientations' minimal impact on participant satisfaction suggest that the sources of variation in satisfaction lie elsewhere. There may be other internal variables that affect satisfaction,

but more probably there are external variables that greatly influence satisfaction.

(188 pages)

CHAPTER I

STATEMENT OF THE PROBLEM

The Problem and Its Setting

In an increasingly complex world, continued change is inevitable. In no area is this phenomenon more pronounced than with the current information explosion (Branscomb, 1979; Toffler, 1970, 1980). Darkenwald and Merriam (1982) note that in many of our more technical fields, it is estimated that the "half-life" of information is less than five years. Not only does our information continue to grow exponentially, but the structure of the information and accompanying technology is becoming ever more complex and specialized.

As the volume of information increases and the nature of our knowledge changes, society as we know it is undergoing restructuring (Boshier, 1985; Boulding, 1964; Whitehead, 1931). The transformation from a capital-oriented industrial society to an information-oriented society has forced many people to seek retraining or further education (Bell, 1980; Lindsay, Morrison, & Kelly, 1974). Not only are women entering the labor force at all levels and in record numbers, but like men many of them are changing major occupational areas several times throughout their careers (U.S. Bureau of Census, 1980). A Department of Labor study estimates that a 20-year-old man will make six to seven job changes in the course of his working life

(Wirtz, 1975). The need and desire for additional education and retraining are making "lifelong learning" one of the constants we can count on in a society bombarded by technological and social change (Naisbitt, 1982).

Societal change, brought on by the information age, has increased the need for lifelong learning. There are different reasons or "motivational orientations" that impel people to engage in learning activities. Many individuals are reentering the educational process for retraining and new skill acquisition, while others are attracted by a desire to explore new ideas and offerings produced by the information explosion. Still others long for the social contact and milieu often found within the educational environment (Houle, 1961).

This expanded demand for lifelong learning is creating the need for non-traditional educational delivery systems (Johnston, 1987). Many individuals desiring further education are located in remote areas where they do not have access to university campuses or continuing education programs. Many of these individuals in outlying areas are in a precarious position because they are affected by societal changes and are often in a position to do little about it (Benson & Hirschen, 1987; Cropley, 1963).

Several institutions, in an attempt to meet the growing needs of remote potential clientele, have turned to Electronic Distance Education (EDE) (Calvert, 1986;

Hudspeth & Brey, 1986; Seamons, 1987a). Through the use of new technology, many individuals can now pursue educational opportunities while remaining in their local area. Some people feel that distance education will be the primary method of university education in the future (Calvert, 1986). Even though these programs appear successful, due to an increasing number of programs and enrollments, many questions still remain to be answered.

In EDE, students find a learning environment different from previous classroom environments. By definition the teacher is not physically present in the classroom, and instruction is presented via some form of electronic media with class members scattered over hundreds or thousands of miles. In the process of developing new educational methods, new educational environments have also been created to help meet the needs of lifelong learners (Moore, 1987).

As these new environments are created, they are accompanied by the need for accurate understanding of what is transpiring at the teaching-learning level (Moos, 1979; 1988). For example, certain students may have a more difficult time than others adjusting to the EDE learning environment. It may be more difficult for some to feel as involved with the instructor and the class when they are separated by many miles and connected by telephone lines.

Some of the common measurements of educational success (grades and students completing courses) are not the only indicators of success in an EDE environment. Students may be obtaining satisfactory grades in their EDE courses, but are they having positive educational experiences in the process? Satisfactory grades may be due to some internal motivational factor that forces students into this new educational environment. Some researchers feel that motivated students learn from any medium, and in many instances students learn not from the medium or system used, but in spite of it (Coldeway, 1986; Schramm, 1973).

In examining the current EDE landscape, it is easy to become lost and confused by all the electronic jargon and new innovations. One must be continually reminded that the heart of EDE is not the hardware or software of the system but the internal change occurring in the individual learner (Burnham & Seamons, 1987). Many new electronic methods and specialized techniques may be created and presented, but it must be assumed that learning is a process that can take place only within the individual learner (Verner, 1962; Travers, 1982).

In addressing the issue of how new learning environments affect learning, one must not overlook the learner. In EDE, learning may be facilitated with the right combination of software, hardware, and mindware (Johnston, 1987; Salomon, 1983, 1985). "Mindware" is a

term coined by Salomon (1983) and refers to the mindset a learner brings to the instructional situation. Regardless of the environment, the learner is the vital part of any educational endeavor.

Inasmuch as highly motivated learners may endure any educational environment or process to achieve a passing grade, more than grades need to be examined to evaluate educational experiences of individual students. How satisfied is the individual learner with his or her educational experience with an EDE system? How does the learner's motivation correlate with the learner's perceptions and satisfaction with the educational environment? Is the EDE learning environment more attractive to learners from a particular motivational orientation? These questions demand exploration in an attempt to examine learning experiences individuals are having over EDE systems.

Statement of the Problem

Certain researchers see distance education as another component of main-stream education. These researchers regard distance education as a vehicle for distribution of education. Other investigators treat distance education as a type of education in its own right that can only be described and analyzed to a limited degree using traditional educational terms. This second group proposes

that many of the already answered questions concerning education need to be reexamined and reevaluated in light of distance education (Holmberg, 1987; Peters, 1983; Smith & Kelly, 1987). Only by asking and answering these questions can researchers know which group is correct.

As the number of EDE programs increase and more individuals take advantage of the educational opportunities they provide, significant areas that need to be carefully examined are student demography and motivation (Calvert, 1986; Coldeway, 1986; Holmberg, 1987). Although there has been some research dealing with hardware and software with EDE systems, we still know very little about the students and the perceptions they bring to an EDE environment. Without a better understanding of who is participating in EDE programs educators are limited in how they can effectively help the learners.

With better insight and understanding as to who is taking EDE classes, what their motivational orientations are, and how they are feeling about their educational experiences, better offerings may be developed. Instructional designers, program planners, EDE administrators, and instructors could benefit from better understanding their clientele. Students involved in EDE environments will also be better equipped to deal with the uniqueness of the environment by research concerning learners who are having positive experiences. By better

understanding the participants in any educational process, improved education may be achieved (Boshier, 1985; Holmberg, 1987).

Statement of Purpose

This study examined students participating in EDE. Utah State University (USU) began EDE Fall Quarter of 1984 by offering 12 courses for 35 credits hours with an enrollment of 284. It has grown to 30 courses involving 98 credit hours and 1188 enrollments in Fall Quarter 1988. At present there are 17 outreach centers throughout Utah and southwestern Wyoming with three additional centers at the Utah State Penitentiary (see Appendix B). The hub of operations lies at Utah State University in Logan, Utah, from where the classes are distributed to the different outreach sites.

To gain a better understanding of the participants involved with EDE, demographic and learner motivational data were gathered and examined. Information was also gathered dealing with the participants' perceptions of the learning environments existing in EDE. It was the purpose of this study to first analyze the demographic and motivational data to see how learners' motivational orientations compare to adult learners involved in more traditional adult education learning opportunities. Secondly, learners' perceptions of the learning environment

were compared to their motivational orientations to see if there is any difference in how individuals with different motivational orientations are perceiving their EDE experiences. Finally, multiple regression analysis was run using student satisfaction as the dependent variable and demographic data and motivational orientations as the independent variables to determine what influence these factors had on students' satisfaction.

Other learner data that were collected and examined were current course of study, current college program, number of Com-Net courses experienced, site location, and how many face-to-face extension classes had been taken during the past three years. These data were correlated along with the demographic data in examining motivational orientations and student satisfaction in an attempt to better understand EDE students.

In an attempt to determine if any findings were unique to an EDE system, a comparison group was selected. Each quarter Utah State University offers a wide assortment of extension classes throughout the state. A group of students from classes in rural areas that was taught with instructors physically present was selected. The information gathered from the EDE students was also gathered from the comparison group. Similar analyses were run on the face-to-face groups. Upon completion, the two groups (EDE and face-to-face) were compared to see if there were any differences.

Statement of Justification

Although there has been considerable research examining adult participants' motivational orientations in face-to-face education settings, no studies have been found where these factors have been examined with adults in distance education. There is some evidence that EDE students may differ in their motivational orientations from typical adult learners involved in other adult educational activities (Boshier, 1982a; Johnson, 1989; Seamons, 1987c).

If students differ in their motivations for EDE participation as opposed to traditional adult learning activities, such differences may influence designing and implementing distance education programs and courses (Boshier, 1985). If such is not the case, then this may give further evidence that EDE is a viable education system for adult learners without unique program design and implementation. Regardless of the determination, the findings will prove to be helpful in future planning for EDE program direction.

Hypotheses

In examining relationships between motivational orientations and participants' perceptions of the learning environment, the following hypotheses were tested. In

addition, multiple regression analyses were run using participant satisfaction as the dependent variable and student demographic, student motivational orientation, and course data as the independent variables to develop an EDE student profile.

1. Adult learners who are involved in Utah State University's Com-Net system will not differ in their motivational orientation scores, as measured by Boshier's (1982b) Education Participation Scale (E.P.S.), from adult learners in more traditional face-to-face educational settings.
2. There will be no significant correlation among Com-Net students' perceived satisfaction as measured by the College and University Classroom Environment Inventory (CUCEI) and their motivational orientations as measured by the E.P.S.
3. There will be no significant correlation among Com-Net students' perceptions of the material environment as measured by the Learning Environment Inventory (LEI) and their motivational orientations as measured by the E.P.S.

4. There will be no significant correlation among Com-Net students' perceptions of involvement as measured by the CUCEI and their motivational orientations as measured by the E.P.S.

5. There will be no significant correlation among Com-Net students' perceptions of their extension experience and their motivational orientations as measured by the E.P.S.

After the five hypotheses had been tested on the EDE group, hypotheses two through five were tested on the face-to-face comparison group. Following this the results of the two groups were compared to see if there were any significant differences between the EDE students and the face-to-face comparison group students.

Definition of Terms

The following terms are important to this study and will be used as defined:

Adult learner is an individual whose major social role is characteristic of adult status who is involved in some systematic and sustained learning activities for the purpose of bringing about changes in knowledge, attitudes, or skills (Darkenwald & Merriam, 1982).

Com-Net Service is Utah State University's EDE course facilitation service. Com-Net uses a variety of electronic communication devices networked into distinct systems (Seamons, 1987a).

CUCEI is the abbreviation referring to the College and University Classroom Environment Inventory developed by Fraser (1985) to be used at the tertiary level. It is an attempt to measure distinct dimensions of the classroom psycho-social environment. This inventory consists of five subscales of which two, satisfaction and involvement, were utilized in this study (Fraser, 1985).

Device is a mechanical instrument or an environmental factor that enhances the effectiveness and utility of techniques but cannot independently operate as a technique for the acquisition of knowledge (Verner, 1962, p.10). Examples include writing boards, overhead projectors, pictures, slides, films, video tapes, and computers (Cowan, 1984; Romiszowski, 1981).

Distance education is a teaching-learning transaction wherein the person, persons, or institutions providing instruction are separate either in place, time, or both from the learner (Moore, 1987).

Electronic Distance Education (EDE) refers to the delivery of instruction and feedback via electronic devices to learners in locations away from the instructor. This

definition and term was first coined by Seamons (1987b) to describe this subset of distance education.

Education Participation Scale (E.P.S.) is an instrument designed to measure the motivational orientations or the reasons why an individual is participating in an educational activity. The instrument is divided into six scales, each measuring a unique motivational orientation. The six scales are social contact, social stimulation, professional advancement, community service, external expectations, and cognitive interest. Each scale is an attempt to identify and measure an independent reason an individual has chosen to participate in an educational activity (Boshier, 1985; Boshier & Collins, 1985).

Face-to-face (FTF) refers to an extension class taught away from the university but with an instructor physically present.

Involvement refers to the extent to which students participate actively and attentively in class discussions and activities. This is measured by a subscale on the CUCEI (Fraser, 1985).

Learning environment deals with student and teacher perceptions of important social and psychological aspects of the teaching-learning setting. Several instruments have been developed to measure learning environments. These instruments attempt to measure concepts identified as good predictors of learning. In this study the material

environment scale of the Learning Environment Inventory (LEI) will be used along with the satisfaction and involvement scales from the CUCEI. These will be employed to determine the learners' perceptions of their environments (Walberg & Haertel, 1980).

Lifelong learning is the concept that education is a process that continues in one form or another throughout life and that its purposes must be adapted to meet the changing needs of individuals at different stages of their lives (Darkenwald & Merriam, 1982).

Material environment refers to extent to which the physical environment is conducive to learning. It is measured by a subscale on the LEI (Fraser, 1985; Walberg & Haertel, 1980).

Method is the relationship established by an institution with a potential body of participants for the purpose of systematically diffusing knowledge among a prescribed but not necessarily fully identified public (Verner, 1962, p.9).

Motivational orientations are an attempt to "...discern order or structure in the enormous variety of reasons that adults give for participating in education" (Darkenwald & Merriam, 1982, p. 133). For the purpose of this study, the motivational orientations of the participants were measured by the use of Boshier's (1982b) Education Participation Scale (E.P.S.).

Student satisfaction is the extent to which individuals enjoy and find fulfillment in their educational experience. It is also a measure of how students' experiences measure up to their expectations. For the purpose of this study, the satisfaction scale from the CUCEI were used (Fraser, 1985; Walberg & Haertel, 1980).

Technique is defined as the relationship between learners and learning material established by the instructional agent to facilitate learning among a particular and precisely defined body of participants in a specific situation (Verner, 1962, p.9). Techniques are the identifiable procedures used by the instructor to achieve specific educational objectives.

Summary

Societal change, brought on by the information age, has increased the need for lifelong learning. This expanded demand for lifelong learning is creating the need for non-traditional educational delivery systems (Johnston, 1987). EDE is an attempt to meet this growing need.

As EDE systems develop, they in turn create new learning environments. These new learning environments are accompanied by the need for accurate understanding of what is transpiring at the teaching-learning level (Moos, 1979; 1988).

This study examined the motivational orientations of a group of EDE students. The students' perceptions of an EDE environment were also examined to see if there was any relationship between their learning environmental perceptions and their motivations.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The purpose of this study was to explore the relationships between students' motivational orientations and their perceptions of an Electronic Distance Education (EDE) learning environment. As increasing numbers of adult learners are attracted to EDE settings, questions are raised concerning the unique characteristics of these new learning environments (Moos, 1988). What motivates adult learners to participate in EDE offerings and how they perceive these new learning environments are two such questions.

The review of the literature examines the available conceptual and research background pertaining to the variables in this study. As the study deals with adult learners, the area of adult education is first examined. Next the area of motivational orientation research is explored. This is followed by an examination of learning environments as a means of measuring students' perceptions of their educational experiences. The review of the literature concludes with a review of distance education to establish the context of EDE.

Adult Education

This study deals with a population of adult learners. Darkenwald and Merriam (1982) define an adult learner as an individual whose predominant social role is characteristic of adult status and who is involved in some organized and sustained learning activities for the purpose of bringing about changes in knowledge, attitudes, or skills.

One of adult education's recognized concerns is to help individual adults learn, grow, and improve their abilities so they can live a richer and more productive lives. The beginnings of adult education have their origins among primitive peoples, as certain customs and knowledge were passed from one generation to the next (Hallenbeck, 1964).

Modern society has created an environment that has far-reaching implications for adult education (Boshier, 1985; Boulding, 1964; Darkenwald & Merriam, 1982; Hallenbeck, 1964; Naisbitt, 1982). With the constant stream of new information, which brings rapid change, our adult population requires more education and training than ever before.

Verner (1962), in discussing adult education was careful to distinguish between information dissemination and learning. The main objective of information dissemination is to disperse knowledge. In so doing learning may or may not occur. When information is received by individuals with differing backgrounds and in

differing environments, it can not be assumed that what was interpreted by the receiver is what was intended by the sender. Without active feedback education can not be assured (Travers, 1982).

In describing a conceptual scheme for the identification and classification of processes for adult education, Verner (1962) described the methods, the techniques, and the devices of education. He defined method as "the relationship established by the institution with a potential body of participants for the purpose of systematically diffusing knowledge among a prescribed but not necessarily fully identified public" (p.9). These methods range from unsupervised correspondence courses to traditional face-to-face classes.

Verner (1962) defined technique as the "relationship established by the institutional agent (adult educator) to facilitate learning among a particular and precisely defined body of participants in a specific situation" (p.9). Techniques are the processes or instructional activities that educators direct to augment learning or behavioral changes. The implementation of technique within the education method is where and how the learning transaction takes place.

To help facilitate learning, numerous mechanical instruments or environmental factors may be utilized. Verner (1962) referred to these instruments and factors as

devices. Again, these devices can not in and of themselves teach but they can enhance the effectiveness and utility of a technique.

Although Verner's scheme was well thought out, he could not have foreseen the communication technologies that exist today. Burnham and Seamons (1987), in attempting to update Verner's scheme, suggest that devices, especially electronic devices and systems, can not only affect methods but even create new methods. They propose that consideration of environmental devices, the needs of individuals, and the needs of the institutions can help determine method and techniques. These devices need to be weighed in the overall conceptual scheme of the processes for adult education. EDE is an example of using environmental devices to create methods and techniques and opening doors to many more of the heretofore "not necessarily fully identified public" (Verner, 1962, p.9).

Motivational Orientations

This study used as independent variables the motivational orientations of adult learners participating in EDE. A review of the development of motivational orientation research is presented to help establish the conceptual foundation for the current research.

Central to the study of adult education is the desire to understand what motivates adults to participate in

educational opportunities. According to Houle (1979), adult learners' motivations have been pondered and discussed more than any other topic dealing with the education of adults. Inasmuch as many adult learners are consumers of education, motivational research in adult education may be likened to market research in the business sector (Boshier & Collins, 1985; Darkenwald & Merriam, 1982). There is a long-standing emphasis that programs should be harmonious with adult needs and motives. This was stated as early as 1903 with the founding of the English Workers' Educational Association and has been reiterated many times since (Boshier and Collins, 1985; Lindeman, 1926; Tough, 1971).

Early attempts to understand adult motivation came from the discipline of psychotherapy. Freud and his followers found the drive for individuals' actions in deep inner drives and urges. The behaviorists found motivation in external, environmental forces (Knowles, 1978). Both schools of thought saw humankind basically as another type of animal.

Maslow (1970), with the publication of Motivation and Personality, assaulted prevailing psychological theories and began what many refer to as third-force psychology. Third-force psychologists, such as Maslow (1970) and Rogers (1969), were concerned with the study and development of the total human being. They felt that when a person feels

safe enough to dare, he or she will be motivated to reach out to his environment and learn.

Although motivations were recognized as important, very little was done to try to develop any theoretical base dealing with educational motives. The prevailing psychological schools of thought, though concerned about motivation in general, did little in regards to adult educational motives.

With the development of the Adult Education movement, educators began to concern themselves with the motivations that impel people to participate in educational programs (Boshier & Collins, 1983). Lindeman (1926) indicated that adults are motivated to learn as they experience needs and interests that learning will satisfy. He felt that these needs and interests were the appropriate starting points for organizing adult learning activities.

Early attempts by educators to better understand learners' motivation consisted of idiosyncratic lists of motives presumed to apply to their participants. Williams and Heath (1936) developed several lists of motives and administered them to groups of participants. Their findings are difficult to compare because their lists were especially constructed for each group. Without standardized instruments, not to mention reliability or validity data, findings are of limited generalizability.

For many years researchers attempted to describe and define participants' motives without using any coherent theoretical formulation. Houle (1961) tried to establish some order to this uncertain phenomenon by formulating a typology that explained the orientations of adult education participants.

Houle (1961) designed a study to discover why adults engage in continuing education. On the basis of extensive interviews with twenty-two individuals, he concluded that individuals can be classified into three types. Houle stated, "As I pondered the cases, considering each one as a whole, it gradually became clear (after many an earlier analysis had led nowhere) that within the group there were in essence three subgroups" (p. 15).

The first group of individuals that Houle described was goal oriented learners. These people use education as a means of accomplishing fairly clear-cut objectives. As a need or an interest appears, they take a course, read a book, or find some other way to satisfy their desire. They confidently accept adult education as a way to solve problems or to pursue particular interests.

The second group, the activity oriented, participates in learning primarily for reasons unrelated to the purposes of the educational activities. They enjoy the social contact and the escape from everyday activities that is often associated with educational environments. Houle

suggested that these individuals, when asked directly about their motives, would prefer to give reasons that would place them in one of the other two categories. They are often reticent about their true reasons for being involved.

The learning oriented or third group, seeks knowledge for its own sake. These individuals are usually avid readers who are trying to learn at every opportunity. They see their own lives as one big learning adventure. Education to them is a constant rather than a periodic activity.

Houle said that these three types were not totally independent of each other. Though each had a distinct well-defined core, there was some interrelatedness. Pictorially, they could be depicted as three circles slightly overlapping at the edges.

Houle opened the door to a whole new line of study as researchers began to empirically test his propositions (Boshier, 1971, 1976, 1977, 1985; Burgess, 1971; Dow, 1965; Sheffield, 1964; Sovie, 1973). Attempts to test this tripartite typology and its empirical foundations were cited significantly more often by authors published in Adult Education (U.S.A.) between 1968 and 1977 than any other topic in the adult education literature (Boshier and Pickard, 1979).

Most of the researchers involved in investigating Houle's typology have used some method of factor analysis.

They began by developing a list of items derived from Houle's and others' work that indicated reasons for involvement in an educational setting. A Likert scoring scale was then attached to each item ranging from "no influence" to "much influence". There have been instruments with as few as four gradations and others with up to nine for each reason. Individuals who take the instrument read each item and then indicate how much influence that particular item has on their being involved in the learning activity in question.

Factor analysis is performed to determine the correlations among the items. Items with high intercorrelations are grouped together into factors. Further sophisticated statistical analysis is then performed to attempt to reduce the number of factors even further.

In examining the different studies, it is critical to remember that factor analysis merely structures a correlation matrix. Factor analysis output is a function of input. It has nothing to do with the quality of variables used as data input. For example, many people, including Houle (Boshier, 1976), were impressed when Burgess (1971) discovered a "religious factor" in his investigation of 1,046 subjects in the metropolitan area of St. Louis, Missouri. Further investigation showed that Burgess included in his instrument several items dealing

with religious reasons for being involved. That there was a high correlation among the religious items is not surprising, but this does not of itself have any meaning.

Similarly it is not surprising that all the instruments have turned up findings similar to Houle's typology. Inasmuch as they are based on his assumptions, the findings naturally reflect the origins of the instruments.

In attempting to validate Houle's typology, researchers came up with mixed results. Sheffield (1964), using an instrument based on Houle's typology, claimed to have extracted five factors, which he called orientations. His sample consisted of 453 adult education participants in 20 continuing education conferences held at 8 universities in the United States.

Sovie (1973), in studying continuing education patterns of nurses, produced eight patterns of what she called "learning orientations." Flaherty (as quoted in Boshier, 1976) claimed to have extracted twelve factors in his study of adult extension students. Both Sovie and Flaherty claim that their findings fall into Houle's three major categories.

Dow (1965) attempted to replicate Houle's study with 24 adult education participants in San Francisco. No empirical analysis was attempted, but she subjectively assessed the motives given by her respondents. Dow concluded that the reasons for participation were much more

complex than Houle had conceived, especially when dealing with Houle's activity orientation.

Boshier (1971), working with attendance and dropout research in New Zealand, began development of a motivational orientation scale based on the work of Houle and the previous work of Sheffield. Boshier initiated his research by examining data from 233 adult educational participants selected at random from a variety of programs sponsored by three institutions in New Zealand. Boshier uncovered 14 first-order factors or motivational orientations, 7 second-order factors, and 4 third-order factors. Boshier (1971) claimed that, "The "boiling down" of the 14 first-order factors has revealed a structure not unlike the three-factor Houle typology" (p.19).

Almost every researcher has produced more than three factors. Even so there has been an inexplicable hesitation to say that Houle's typology was an oversimplified representation of people's motivational orientations. This led Darkenwald and Merriam (1982) to report that, "It is difficult to judge whether or not the studies based on factor analysis support Houle's original typology" (p. 135). The debate seemed to rest as researchers continued to use different motivational instruments to help them collect data, while the conceptual foundation of Houle's typology was neither challenged nor confirmed.

In 1985, Boshier and Collins helped answer the debate by completing a meta-analysis to test the veracity of Houle's typology. They obtained first-hand data from researchers who had worked with motivational orientations using Boshier's Education Participation Scale (E.P.S.). The data were from 13,442 learners in Africa, Asia, New Zealand, Canada, and the United States. These data were combined and subjected to a cluster analysis designed to examine the extent to which Houle's typology fit the phenomenological reality that exists within adult education participants.

After extensive examination and statistical analysis of the data, Boshier and Collins (1985) concluded that Houle's goal and learning orientations were reasonably clear as Houle had described them, but that the activity orientation was much more complex than he had envisaged. They see the activity orientation as a forced aggregate of Boshier's Social Stimulation, Social Contact, External Expectations, and Community Service items.

Boshier's E.P.S. is an instrument designed to measure the motivational orientations or reasons why individuals participate in educational activities. The instrument is divided into six scales, each measuring a unique motivational orientation. The six scales are:

1. Social contact: these individuals want to make and consolidate friendships, to be accepted by others, and to improve their social position.
2. Social stimulation: participants enrolled for this factor want to get relief from boredom or the frustrations of day-to-day living.
3. Professional advancement: these individuals are primarily job oriented. They are seeking professional advancement, higher job status, and/or knowledge that will help in other courses.
4. Community service: participants enrolled for this factor want to become better citizens and improve their ability to participate in community work.
5. External expectations: these individuals are complying with the instructions of someone else. They are enrolled on the recommendation or mandate of someone else.
6. Cognitive interest: participants enrolled for this factor enjoy learning for its own sake. They want to satisfy an enquiring mind.

Each scale is an attempt to identify and measure an independent reason an individual has chosen to participate in an educational activity (Boshier, 1985; Boshier & Collins, 1985).

In summarizing the results of using the E.P.S., Boshier and Collins (1985) claimed that the broad outlines of

Houle's typology were visible in the results, but that this reality is more complicated than Houle envisioned over twenty years ago. They go on to say that those who need to couch their results in Houle's frame of reference may continue to do so but that studies using E.P.S. scale scores will yield more satisfying and significant results.

Boshier and Collins (1985) have helped to complete a circle that was begun more than twenty-five years ago. Until their study, most motivational researchers have used the E.P.S. and other similar instruments to examine antecedents of motives for participation. Boshier and Collins (1985) called for more studies to investigate the impact of initial orientations on the behavior and learning of adult education participants in a variety of settings, thus treating motivational orientations as independent rather than dependent variables.

One such study was conducted by Potvin (1980), as he examined benefits associated with some orientation scores in three different adult education settings: university credit, university non-credit, and business or industry. He concluded that there were significant differences in reasons for enrolling and in perceived benefits in the three settings. One of Potvin's findings was that individuals who were enrolled in university non-credit settings scored significantly higher on Potvin's "enjoyment

of learning" factor than individuals from business or industrial settings.

Problems with the Potvin study are that he created all his own measures, and there were no reliability and validity data reported on the instruments, making it difficult to interpret his findings. Also the fact that his instrument was developed from segments of three other instruments raise questions of validity in his results.

Clarke and Boshier (1981) studied the relationships between motivational orientations and participant satisfaction with instructional environments. In examining 222 participants enrolled in British Columbia adult education programs, they concluded that participant satisfaction is largely independent of initial motives that propel people to participate. They also suggested that good instruction is simply good instruction and that adult characteristics have little to do with it.

It appears that motivation orientation research has come of age (Boshier & Collins, 1985). Instead of continuing the debate over whether Houle's typology fits into a conceptual framework, Boshier has corroborated it. Today's society is much more complex than the societies of twenty-five years ago (Bell, 1980; Boulding, 1964; Naisbitt, 1982; Toffler, 1970, 1980). This may explain why current research indicates greater complexity in adult education participation than that advanced three decades

ago. Using Boshier's E.P.S., which has undergone years of testing and refinement, results in standardized data for comparable results in comparative studies. Studies examining the relationship of orientation scores with such variables as participants' perceived satisfaction and other perceptions of the learning climate in different educational environments are now possible with a high degree of validity and reliability.

Learning Environments

In an attempt to understand the satisfaction of individual learners with their educational experiences and other environmental perceptions, the area of learning environments was examined. In this study, the dependent variables are the perceived environmental factors of satisfaction, material environment, involvement, and extension. The concept of measuring student's perceptions of their learning environments in education comes from learning environment research.

A classroom is a complicated, energetic social system. As formal and informal norms and rules influence individuals' interactions with the material environment and setting, a social-psychological climate is created. This perspective assumes that each environment has unique qualities. The created climate wields a dynamic influence on students' cognitive and affective performance. As each

environment is unique in its own way, newly created learning environments should be examined to better understand how they are perceived by participants (Haertel & Walberg, 1988; Moos, 1988).

Social psychologists were the first researchers to take interest in classroom behavior. Their main interest was in the interaction among students and between students and teacher (Medley & Mitzel, 1963). Thomas, in 1929, complained that the study of classroom behavior consisted mainly of descriptive accounts, such as diary records and journals. In Thomas' opinion the data obtained from such accounts were subjective and dealt with unverifiable facts. She stated, "The control of this sort of error in our social data is one of the first problems claiming our attention. In other words our data must become independent of our observers within a small and predictable range of error" (p.3).

Thomas (1929) attempted to obtain such data by constructing indices to record an individual's overt actions involving other persons. An independent observer could then be trained to look for and record certain actions. Thomas helped set the standard for which researchers still strive, that of high accuracy and objectivity in their data.

Lewin (1936) helped mold the way classrooms were viewed by recognizing that both the environment and its

interaction with individuals are potent determinants of human behavior. His familiar formula, $B=f(P,E)$ (behavior is a function of the interaction of the person and the environment), helped focus attention on the role the environment plays in determining behavior.

Murray (1938) followed Lewin by proposing a needs-press model. In his model the "needs" of an individual interact with the "press," or the influence of the environment to create a learning environment. Pace and Stern (1958) continued to expand and expound Murray's needs-press model and the impact environmental forces have on human development and behavior (Stern, 1970).

Beginning in the 1950s many environmental indexes were developed and tested in an attempt to measure classroom or learning environments (Withall, 1949; Bovard, 1951; Medley & Mitzel, 1963; Cornell, Lindvall, & Saupe, 1952). These early attempts were referred to by Rosenshine and Furst (1973) as low-inference measures. These measures concentrated on an observer recording frequency counts of specific, denotable, and relatively objective classroom behavior. These observations were then used to test causal explanations of how factors in the educational environment foster learning.

An early example is the work of Withall (1949). By focusing on teacher's interactions, Withall measured what he called the "social emotional climate" of a classroom.

Other studies, such as Bovard's (1951), focused on group-centered versus leader-centered classrooms.

Numerous studies found that counts of teaching and learning behaviors proved convenient enough to measure but explained little variance in learning (Chavez, 1984; Fraser, 1985; Walberg & Haertel, 1980). Goodlad (1979) stated that, "too many researchers are preoccupied with research on single instructional variables that rarely account for more than 5% of the variance in student outcomes" (p.347).

The movement towards developing classroom environmental measures was an attempt to discover teaching and learning behaviors that facilitate the learning process. In educational research and evaluation, a recurring question is: How does one determine the effectiveness of an educational program, curriculum, or system? In answering this question, many researchers throughout the world rely heavily and, in many cases, exclusively on conventional standardized achievement tests and other cognitive outcome measures of learning. No responsible evaluators would call for a discontinuance of their use, but few claim that such tests give a complete picture of the educational process and outcomes (Fraser, 1985; Walberg & Haertel, 1980; Haertel & Walberg, 1988).

In the late sixties, three researchers began sustained investigations of educational environments in the attempt

to measure variables that account for a considerable amount of variance in learning outcomes. Marjoribanks (1974) developed parent-interview measures of the education stimulating qualities of the home environment while working in Toronto (Canada), Oxford (England), and Adelaide (Australia). Moos (1979), at Berkeley and Stanford, California, measured the social environments of college and school classes to find common elements of group climate and satisfaction. Walberg, at Harvard University and the University of Illinois in Chicago, established the validity of using student-perception measures of classroom social environment to predict cognitive, affective, and behavioral learning outcomes (Walberg & Haertel, 1980).

This new line of classroom research was based on the socio-psychological environment of the classroom and emphasizes perceptual and judgmental variables. These perceptions and judgments do not come from outside observers but come from those actually participating in the educational environments being evaluated. Inasmuch as they are immersed in the educational environment, students stand at a good vantage point for making such evaluations. The students in the class form a group of well-informed judges of what is transpiring in the classroom. When compared to a short-term observer, even though he or she may be highly trained, the students have access to data over a longer time period (Fraser, 1985; Walberg & Haertel, 1980).

These measures, which rely on inferences from a series of classroom events and respondents, have been called high-inference measures by Rosenshine and Furst (1973). The high-inference measures focus on the socio-psychological environment of the class. This is divided into the areas of the affective climate (e.g., cohesiveness, satisfaction, cliqueness), the status structure (e.g., democracy, competitiveness, favoritism), and the aspects directly related to instructional tasks (e.g., goal direction, formality, speed). In extensive world-wide research, the variables in all of these categories have been found to relate significantly to instructional outcomes. For example, Walberg and Haertel (1980) claim that material environment has a .86 positive correlation with learning.

Although the different instruments vary somewhat as to their different scales (depending on the instrument, grade level, and setting), one scale that appears on every instrument and has been shown to have the highest positive correlation with learning is student satisfaction.

According to Walberg and Haertel (1980) satisfaction has a positive correlation of 1.00 with learning. A correlation of 1.00 raises questions of objectivity and causes concerns of overzealousness to a cause. In their report of a perfect correlation, no data are offered to substantiate the claim.

One area of research missing from the literature is studies dealing with classroom environment among adult learners and college settings (Fraser, Treagust, Williamson, & Tobin, 1987). Though several studies were found, the instruments used had been developed for junior and senior high school settings (Darkenwald & Gavin, 1987; De Young, 1977). The question of transferability between settings arises, and thus validity issues regarding the findings arise.

Moos (1979) has done extensive studies of college environments generally but nothing dealing with individual classrooms. One possible cause for the dearth of studies of college and adult environments could be the lack of suitable instruments. Only recently was the College and University Classroom Environment Inventory (CUCEI) developed for use at those levels (Fraser, Treagust, & Dennis, 1986). Despite its newness, it appears to have the potential to stimulate and facilitate work at the tertiary level.

The use of high-inference measures has been effective in studying traditional classroom learning environments. Ellett (1985) states that little research has been conducted to examine the affects of technological innovations on learning climates in education. He calls for future study examining such innovations.

Adult learners are often involved in learning environments that differ from the typical high school or university classrooms. As increasing numbers of adult learners are involved in distance education environments, these environments need to be explored (Stoffel, 1987).

Distance Education

This study deals with students involved in distance education. As the study was done in a distance education setting, a brief review of distance education is in order.

Distance education was created to give individuals who could not go to a regular school or university for financial, social, medical, or geographical reasons a chance to study (Holmberg, 1977). Though the current distance education landscape is filled with the latest technology, distance education had its beginnings with the advent of reliable mail service (Knowles, 1962). Correspondence study is characterized by an individual enrolling in a course in which there are no regularly held classes. The majority of communication between student and instructor is in written format.

Correspondence study began in the late 1800s by several universities as extensions of their regular academic courses. The courses were taught by regular faculty through a process of assigned readings, written assignments, and the return of the lessons with comments

from the instructor. It was quickly discovered and widely exploited by commercial institutions. Many abuses arose as numerous "diploma mills" were created to take advantage of the many people who desire further education and degrees. These "diploma mills" are notorious for awarding spurious degrees in return for large fees and little work (Knowles, 1962).

The correspondence community, through self- and government regulation, strove to improve its performance and image. Correspondence study remained the main method of distance education until the advent of telecommunications (Garrison, 1985). Two-way teleconferencing can now provide for immediate feedback (Olgren & Parker, 1983).

As new technologies have been invented, they have been incorporated into distance education. Television, film, audio tape, and video tape have been used extensively in distance education. As telephones, computers, and microwave and satellite systems have been developed, they have found their way into the educational process. These inventions have removed some of the long-standing barriers of time, distance, and expense that have stood between learners and institutions (Johnston, 1987). This has opened many doors to individuals desiring further formal education (Benson & Hirschen, 1987).

New technologies now provide educational opportunities wherein an instructor and groups of students separated by distance have two way communication and immediate feedback. The simplest of these systems is telephone hookup but may include two-way, full-motion, color-video capabilities. At Utah State University Seamons (1987b) coined the term Electronic Distance Education (EDE) to refer to systems that, through the use of electronics, bridge the gap of distance.

The evolution of EDE has often been treated with skepticism by much of the academic community. Some faculty perceive continuing education and EDE as second rate and therefore not worthy of first-class research (Calvert, 1986; Jevons, 1987). In spite of this perception, increasing numbers of people are taking EDE courses. In light of the fact that many people are involved in EDE, and EDE programs are rapidly expanding, these students and programs deserve research attention. One need in EDE research deals with understanding who is being attracted to EDE courses and what experiences they are having (Calvert, 1986; Chute & Balthazar, 1988; Coldeway, 1986; Holmberg, 1987). Perhaps individuals with certain motivational orientations are satisfied with EDE classes. Others with different motivational orientations may not find EDE settings conducive to their personal goals. These questions are important in understanding experiences students are having in EDE courses.

Summary

As modern society creates new opportunities and new pressures for learning, increasing numbers of adults are becoming involved in adult education. As more adults take advantage of lifelong learning opportunities, they are coming from differing backgrounds and for different reasons. An understanding of the motivations of adult learners can help adult educators better meet the needs and wants of the learners.

Innovative devices are also creating educational methods and techniques for reaching a larger audience of participants. As new learning environments are attracting additional learners, an understanding of those educational experiences is important. Learners' perceptions of these learning environments can not only help indicate the success of new methods but may also give us insights into their future improvement.

Utah State University's EDE system, Com-Net, is just such a new educational method. It is giving many students learning opportunities that they could not have in any other way. An understanding of the motivations that are bringing students to this new method and their perceptions of the new environment are fundamental to comprehending the learning experiences that they are having.

CHAPTER III

PROCEDURES

Introduction

This study involved quantitative research that was descriptive and correlational in nature. It utilized one standardized instrument, one slightly modified standardized instrument, and an instrument developed to collect demographic and course data from individual students. The main focus of the study was learners involved in an Electronic Distance Education (EDE) environment. To better examine the results of testing the EDE group, a comparison group of extension students taught in a regular classroom by an instructor was chosen for comparison.

After reviewing the literature it was determined that using Boshier's standardized Education Participation Scale (E.P.S.) is the most efficient and effective way to determine the motivational orientations of the learners. Also when using a standardized normed instrument, the results can be compared to past research that has utilized the instrument.

Far too often in adult education, researchers produce 'one-off' studies that leave the field with a lack of integration. Schutz (1977) criticized researchers who continued to produce unconnected and atheoretical findings by saying it is "a disservice to continue to pile up

hundreds of isolated studies with findings that cannot be combined for analysis due to incompatibility of research design" (p.4).

This study also had a qualitative aspect. Several interviews and observations were conducted by the researcher to add additional insight to the quantitative findings.

This chapter begins with a description of the procedures used in selecting the population and sample. Next, the research setting and the procedures used to collect data are described in detail. The instruments used in collecting the data are then described along with the methods used to analyze the data. Finally, the limitations of the study are reported so that the generalizability of the findings can better be put in context.

Population and Sample

The target population for this study was students taking EDE courses. The accessible population was all students taking courses over Utah State University's Com-Net system during Fall Quarter, 1988.

Multistage cluster sampling was used to determine the sample of participants to be used in the study. The units of sampling were the individual classes. The Com-Net system posed several difficulties for choosing a representative sample.

The first problem encountered was that certain classes consisted of basically the same students. During Fall Quarter 1988, classes in two graduate programs, two undergraduate programs, and one administrative endorsement program were offered over the Com-Net systems. Most students take two or three classes per quarter, usually with two on the same night. Although most of the same students attend both classes, not all do; and usually a few other students take classes who are not involved in degree programs.

Com-Net issues pre-registration enrollments that consist of numbers and no names. Not until after the third week of the quarter was it possible to obtain class lists so that name checks could be run. Inasmuch as permission was obtained from the professors and Com-Net personal to utilize the system before the beginning of the quarter, a judgement had to be made on which classes had basically the same student populations.

In projecting the classes for Com-Net's Fall Quarter, 30 classes for a total of 98 quarter hours were scheduled with projected enrollments of 1188. Com-Net lists all of projected enrollments by class and site (see Appendix A). By careful study of class enrollment numbers by site, it was determined that there were seven pairs of classes with duplicate enrollments. This limited the pool of unique classes to 23.

The next problem encountered in obtaining an appropriate sample concerned the prison population. Increasing numbers of enrollments are from the Com-Net sites at the Utah State Prison. The projections indicated that of 389 daytime enrollments, 155 (40%) were from the prison. This study dealt with adult learners in an EDE setting involved in undergraduate and graduate degree programs. Inasmuch as the prison population was an atypical group of adult learners, they were not included in this study. Including the prison population would have greatly reduced the generalizability of the findings.

The day classes taught over Com-Net had to be dropped from the pool because of the lack of adequate numbers of students without the prison population. The evening classes projected to have 795 enrollments with only 27 (3.4%) from the prison, so these classes were considered suitable. This dropped 12 classes from the pool, leaving 11 classes to choose from.

The 11 unique classes were then divided into an undergraduate group of 7 and a graduate group of 4. It was desirable to gather data from a similar number of undergraduates and graduates to better understand how both groups were perceiving their EDE experience. It was decided to choose one class from each of the four degree programs. All of the classes offered over the Com-Net system are part of a degree program. Not everyone taking

classes is in a degree program, but the credits earned can be applied toward a degree program if desired.

The final four clusters were undergraduate business (3 unique groups), undergraduate psychology (4 unique groups), graduate business (1 unique group), and education (3 unique groups) one unique class was randomly chosen from each cluster. To choose, either three or four numbered pennies were placed in a jar, the numbers representing the classes in the cluster. The jar was shaken and one penny drawn out; that represented the sample class for that cluster. The four classes chosen for the sample were Business Administration 321, Psychology 372, Economics 624, and Education 608.

One change had to be made. The graduate student teaching Psychology 372 refused to participate in the study with her class. She gave as a reason that class time was too valuable and could not be used. She did offer to hand out the instruments and ask the students to bring them back finished. It was decided to choose an alternate class to maintain control over the collection of the data.

The class was also being taught by another teacher teaching the same basic group of students in Psychology 351 in the time slot preceding Psychology 372. The second teacher was approached and readily gave permission to use his class to participate in the study.

The projected enrollments for these four courses Fall Quarter 1988 totaled 226. Six (3%) were from the prison, leaving 220 projected enrollments from the target population. The actual number of students enrolled on the three-week university official lists was 204. Eighteen of these enrollments (9%) were from the prison, leaving 186 students from the study's target population. By the seventh week of the quarter, when the instruments were administered, 12 individuals had dropped out of the classes leaving 174 students. On the evenings the instruments were administered, 161 individuals, 92.5% of the registered students, were in attendance at the classes and completed the instruments. Five individuals' data had to be discarded because the students did not answer all of the questions, leaving 156 in the Com-Net group. Table 1 shows the distribution of subjects over the Com-Net sites. The sites can be located on the map in Appendix B.

Table 1

Number of Subjects at Each Site for Com-Net Classes

Site	BA 321	Psy 351	Econ 624	Ed 608	Total
Brigham City	4	3			7
CEU/Price	8	5		2	15
Dugway	1	5	3		9
Evanston Wyoming			4		4
Hill Air Force Base (Ogden)		1			1
Logan	13	6	8	15	42
Richfield	2	4	3	4	13
Roosevelt	9	5	1	3	18
Snow (Ephriam)	1	4			5
Tooele	5	8	2	2	17
UVCC (Orem)	1		2	4	7
Vernal		4	1	4	9
Weber State (Ogden)			4	5	9
Total	44	45	28	39	156

Forty-two of the participants (30%) came from the Logan center. These students were considered to be part of the EDE classes. When professors travel to different sites, the Logan people are away from the instructor. Also, in many classes the Logan students interact with the students from the other sites, which makes them an integral part of

the EDE class. Statistical analyses indicated no direct effects could be attributed to the Logan numbers.

In an attempt to determine whether any findings were unique to the EDE environment in question, a comparison group was selected to which findings could be compared. Utah State University has offered numerous extension classes for many years around the state of Utah. Many professors drive or fly to the sites to make it possible for many rural residents to further their education.

Ten face-to-face classes were selected as a comparison group. The main criterion for selecting these classes was involvement in continuing education programs in similar geographic areas as the Com-net groups.

The ten classes were from the areas of Vernal, Roosevelt, Tooele, and Taylorsville (see Appendix B). The three graduate classes that were selected were Elementary Education 680, Psychology 666, and Special Education 619. These three classes had an estimated initial enrollment of 54. One problem with the graduate population was that all three classes were from the area of education. The business graduate programs utilize the Com-Net system, while many of the regular extension graduate offerings are in the area of education.

The 7 undergraduate classes selected were History 170, Geography 171, Psychology 366, Psychology 380, Anthropology 101, Chemistry 101, and Family and Human Development 150.

These 7 classes had an original estimated enrollment of 85, giving an estimated enrollment of 139 for the comparison group.

The comparison group was drawn from among the many extension offerings across the state of Utah. Inasmuch as Utah State University is the land-grant institution for the state of Utah, hundreds of courses are offered all over the state every quarter. Many professors drive to areas around the northern section of the state, and the university flies professors to outlying areas such as Moab, Roosevelt, and Vernal. In many cases local qualified individuals are hired to teach classes. For the 7 classes used for the comparison group, 1 professor drove to the site, 3 professors flew to their classes, and 3 classes were taught by local individuals.

Of the original 10 classes chosen, data were obtained from only 7. One of the classes, History 170, was cancelled the night the data were to be collected due to inclement weather. Due to scheduling problems and lack of time remaining in the quarter, History 170 had to be dropped from the sample.

Two classes, Psychology 380 and Chemistry 101, were dropped when the professors who flew out to Vernal to instruct the classes forgot to give out the instruments. Although the professors offered to send out the instruments

to be given with the final exams, this offer was declined so as to insure uniform data collection procedures.

One other class, Anthropology 101, had declined from an initial 9 enrollments to 2 on the day data were gathered. In total, data were collected from 88 individuals of which 3 instruments had to be discarded due to missing data, leaving the comparison group with an N of 85. Table 2 shows the breakdown of the comparison classes by class, site, and number of subjects.

Table 2

Number of Subjects in Each Class and Site in Comparison Group

Class	Site	Number of Subjects
Geography 171	Tooele	9
Psychology 366	Tooele	7
Elementary Education 680	Taylorville	22
Psychology 666	Taylorville	14
Special Education 619	Vernal/Roosevelt	9
Anthropology 101	Vernal/Roosevelt	2
Family Home Development 150	Vernal/Roosevelt	22
	Total	85

Setting

The EDE methods involved in this study consisted of Utah State University's Com-Net telecommunications services. USU began EDE Fall Quarter of 1984 by offering 12 courses for 35 credits hours to an enrollment of 284. It had grown to 30 courses involving 98 credit hours and 1188 enrollments by Fall Quarter 1988. At present there are 17 outreach centers throughout Utah and southwestern Wyoming with three additional centers at the Utah State Penitentiary (see Appendix B). The hub of operations lies at Utah State University in Logan, Utah, from where the classes are distributed to the different outreach sites.

Com-Net services consist of two major dimensions: the delivery devices or hardware and the infrastructure of human support personnel and staff. These two dimensions operate together to help create a unique educational method.

The devices used in the transmission of the systems consist of the following: two-way audio, two-way facsimile, and two-way electronic writing boards. There are different ways of transmitting pictures to the sites. The A-Net system utilizes two-way black and white still video while the V-Net system utilizes two-way color still video. The V-Net system also has the capability of using a graphics tablet to transmit color line drawings and pictorial images. Every site utilizes an audio cassette

recorder and a videotape recorder to record class sessions (Seamons & Sleight, 1986).

The human element of the infrastructure has been identified as a major determinant in the success of the Com-Net systems (Seamons, 1987a). Local center directors work directly with students and the Com-Net office in Logan to insure that concerns are heard and acted upon. An instructional designer has been used to work directly with instructors in adapting materials and teaching techniques to the system. The system engineer in Logan insures that the technical systems and devices are properly functioning. Each class has a teaching assistant on site who helps in the administration and the distribution of materials and communications with the main teaching center.

The participants in this study come primarily from rural Utah. A conservative background is prevalent in many of these areas. Many of the participants in this study (41%) were involved in the field of education, primarily because many of the extension programs offered by Utah State University are in the field of education.

Of the four instructors who taught over the Com-Net system, two were professors at the University, one in Education and the other in Economics. Both professors had previous experience in teaching over the Com-Net system. A graduate student with previous Com-Net experience taught one of the other classes. The fourth class was a business

class, which was taught by a local banker who had no previous Com-Net experience.

Procedures

The following steps were followed in completing this research study:

1. A detailed review of the literature was conducted. The fields of adult education, motivational orientations, learning environments, and distance education were examined to better define the problem and explore possible relationships.

2. Contact was made with the Com-Net director for permission to conduct the study over Com-Net systems. Permission was also obtained from the Dean of Continuing Education and clearance secured to have access to certain university records. Information was collected from the Com-Net office on courses being taught, which professors were teaching, and projected enrollments for Fall Quarter 1988.

Information was also obtained from the Office of Continuing Education on extension classes being taught around the state Fall Quarter 1988. These classes did not have projected enrollments like the Com-Net classes. Only after the third week of the quarter could information be obtained on how many students were involved in each class.

Classes chosen for this group were selected the fourth week of the quarter.

3. After the sample was drawn and the week before the quarter began, each professor who was teaching a selected course was visited and given an overview of the study. Permission was then obtained to use 15 minutes of class time near the end of the quarter to conduct the research. A day the week before Thanksgiving in the eighth week of the quarter was selected. This was considered far enough past midterms and far enough from the final exam and final deadline dates to minimize these major focal points' effects during data collections.

Four weeks after the initial visit, follow-up letters (see Appendix C) were sent to the professors thanking them for their cooperation and reminding them of the date. One professor asked to be called the week before the date of collection, and this was done.

The same procedure was followed with instructors in the comparison group, except that they were visited during the fourth week of the quarter, due to unavailability of information on enrollments until this time. All agreed to administer the instruments during the third week of November, 1988. Several days before they collected data, these professors were again visited and given packets with the instruments for their students and some specific instructions for collecting the data (see Appendix G).

4. From the review of the literature it was determined that Boshier's (1982b) E.P.S. would be used to measure students' motivational orientations (see Appendix D). One subsection of the Learning Environment Inventory (LEI) and two subsections of the College and University Classroom Environment Inventory (CUCEI) were chosen for measuring students' perceptions of an EDE environment.

5. Questions to measure how students perceived their extension experiences were developed along with modification of items of the LEI and CUCEI to fit the EDE environment (see Appendix E). Demographic data-gathering questions were developed to gather necessary data on the participants. These questions were reviewed and revisions made by a competent evaluator at Utah State University (see Appendix F).

6. Two types of pilot studies were conducted. One was conducted to test the instruments and the clarity of the instructions. The other was performed to test gathering data over the EDE system.

The first pilot study was conducted with two graduate students and two housewives. They were given copies of the instruments, read the instructions, and then asked to go through and answer all of the questions. They were observed and timed to determine how long it actually took to complete the instruments. After they had finished, they discussed the testing session with the researcher and were

asked if they had any particular problems or questions with any part of the instrument. The wording on two items seemed to be misleading and was changed.

A second pilot test was used to evaluate the process of collecting data with no visual contact with the subjects. The participants were seated in a room next to the room in which the researcher sat. Subjects were given the instruments, and instructions were given with no visual contact. The subjects were timed and the procedure was evaluated.

7. Two weeks prior to the scheduled time for data collection, the instruments were sent in packets to the remote sites for the EDE groups. Enough copies were sent for each group participating in the study along with instructions to the teaching assistants at each site. Each packet also included the information as to which dates these instruments would be used and in which classes.

Each instructor participating in the comparison group was personally given packets containing all of their materials one or two days before the scheduled collection. Each comparison group instructor was given a sheet of instructions that was to be read in explaining the procedures for the instruments. This was to help insure uniform conditions under which the data were collected (see Appendix G).

8. The instruments were scheduled to be administered to all of the subjects between the 14th and the 17th of November, 1988. This was done to minimize internal validity problems with the measures being given at different times. Ninety percent of the data were collected during this time. The 15 participants in Price were given the test a week early. One class, Geography 171, was cancelled the night of the 14th due to inclement weather, and those data were collected one week later on November 21. Two professors forgot to give out the instruments, and because of their time constraints their classes had to be dropped from the study. Another class, which was cancelled the 14th due to bad weather, also had to be dropped because of the instructor's final exam schedule.

All of the professors were helpful and considerate in the data gathering process with the exception of one. On the night data were to be collected, he claimed that the instruments were to be completed before class began and hurried the collection of the data in his class. The students were very cooperative and data collection was completed despite the limited time allowed.

9. During the week of November 14th to 17th several on-site observations of Com-Net courses were made. The researcher visited two Com-Net sites in Tooele, where parts of two classes were observed and several interviews conducted with students, teaching assistants, extension

secretaries, and directors. Visits were also made in Roosevelt, Vernal, and the Logan sites, where classes were observed and interviews conducted (see Appendix H).

10. In an attempt to determine if the people who had dropped out of the classes differed in their motivational orientations from those that completed the classes, information on all individuals who had dropped out of the classes used in the study was gathered the ninth week of the quarter. A questionnaire was constructed to determine why they found it necessary to withdraw from the class (see Appendix J). This, together with the E.P.S. and the demographic questions, was sent out to each of the dropouts with a self-addressed stamped envelope (see Appendix I).

Two weeks later a second mailing was sent out to all those who had not been heard from. This mailing contained a new letter of transmittal again asking for their cooperation in the study being conducted (see Appendix I). Inasmuch as Christmas came ten days after the second mailing and was followed by winter quarter, no third mailing was attempted.

11. The dropout responses were coded and categorized (see Appendix K).

12. The data were coded and analyzed.

Design

This study was descriptive and correlational in nature. Data on EDE students were gathered and compiled as to their demographics, courses, program of studies, motivational orientations, student demography, and perceptions of the learning environment. These data were then compared with those of students involved in more traditional extension programs.

The correlational design was used to investigate relationships among variables in an EDE setting. Student motivational orientations, student demography, and students' perceptions of the learning environment were examined in attempting to discover relationships among the variables.

Several observations and interviews were conducted to obtain some qualitative data. It was hoped that these contacts would give additional insight to the quantitative data being gathered.

Data and Instrumentation

The independent variables in the proposed study were the motivational orientations of the students. These were measured by using Boshier's E.P.S. (1982b). Boshier (1971) began developing an instrument to measure the motivations or reasons why adults choose to participate in educational opportunities in the late 1960s. For the past twenty years

he has continued to modify and refine his instrument so that it is reliable and valid (Boshier 1971, 1976, 1977, 1985; Haag, 1976; Morstain and Smart, 1974). It was determined from reviewing the literature that Boshier's (1982b) E.P.S. was the most appropriate instrument with which to measure the motivations of the participants involved in this study. Comparisons could be made to his norms, and the data could be depended upon to be valid and reliable.

The E.P.S. consists of forty statements that contain reasons why some individuals have participated in some form of continuing education. The individual taking the instrument reads each statement and then marks on a Likert scoring scale how much influence that particular statement had on his being involved in the educational activity in which he is currently participating. The Likert scale ranges and is scored from no influence = 1, little influence = 2, moderate influence = 3, and much influence = 4.

Boshier (1976) has concluded that there are six factorial pure dimensions that are measured by the E.P.S. Each factor is a construct that deals with a particular motivation that impels individuals to be involved in learning activities. Each factor has from nine to four statements dealing with it that are averaged to obtain a score for each factor.

The E.P.S. was normed for students with college and university experience with 1860 individuals in the United States and Canada. The norms for those with graduate school experience was derived by examining 874 individuals in the United States and Canada. The norms are listed in Table 3.

Table 3

E.P.S. Norms for University Degree and Graduate School Experience

E.P.S. Scales	University Degree	Graduate School
Social Contact	1.63	1.63
Social Stimulation	1.71	1.67
Professional Advancement	2.21	1.86
Community Service	2.04	1.83
External Expectations	1.58	1.39
Cognitive Interest	3.12	3.18

Reliability for the E.P.S. was determined by using a six week test/re-test study. Test/re-test correlation coefficients for each item had a critical value significant at the .001 level. All items can therefore be considered reliable (Boshier, 1971).

The internal consistency of each factor was examined by calculating coefficient alpha for each factor with a sample of 648 students. Resultant scale scores yielded estimates ranging from .72 to .86 (Morstain and Smart, 1977).

The validity of the E.P.S. was evaluated by in-depth interviews of participants and subsequent comparison of the scale scores on the E.P.S. with the responses from the interviews. As validity refers to the extent the instrument measures the constructs involved, it is usually insured through the adoption of appropriate measures during its construction (Morstain and Smart, 1977).

The dependent variables were students' perceptions of the learning environment and were broken down into four areas. The first of these areas was "satisfaction with the class," second was the "material environment" or the perceived effect of the physical facilities on the learning environment, third was the "involvement" the student felt with the instructor and with the group, and fourth was the "extension" experience or how the individuals felt about taking a course through an extension program.

As a result of the review of the literature it was determined that the CUCEI was the only available learning environment instrument developed and tested for a university setting. It consists of seven subscales that are basically independent of each other. The CUCEI produces a score for each of the seven scales, and no total

score is derived. This means that the instrument may be used in full, or some of the subscales may be used separately (Fraser, personal communication, November 3, 1987; Walberg & Haertel, 1980). It was determined that the two subscales of satisfaction and involvement would be used in the EDE setting.

The instrument that has had the most widespread use in the study of learning environments is the LEI. This instrument was developed and extensively used at the secondary level and was the prototype to the CUCEI. The scale of utmost interest to the EDE setting that was found on the LEI was material environment. Walberg and Haertel (1980) claimed that material environment's correlation of .86 has the third highest positive correlation with learning of their fifteen scales on the LEI. Inasmuch as the CUCEI has no such scale and the perceptions of the EDE students of the material environment were deemed important to the study, the subscale for material environment was used from the LEI.

The CUCEI and the LEI both utilize statements that are followed by a Likert scale scoring system. The responses range from strongly disagree, disagree, agree, to strongly agree. Both of the instruments have seven statements for each subscale. All of the questions for each scale are similar in nature, and when all the scales are not used it is often necessary to use fewer questions for each scale to

avoid redundancy. Zussman (as quoted in Walberg & Haertel, 1980) reported that reducing the number of items in each scale from seven to three items resulted in little reliability loss. It was determined from the literature and the pilot studies that in using four scales, five questions per scale for a total of twenty questions was sufficient. For the final instrument five questions were used from the material environment and involvement scales, six questions from the satisfaction scale, and four questions for the extension scale.

It has also been shown that minor word modification to fit the question to the environment has no real effect on loss of reliability (Fraser, personal communication, November 3, 1987; Walberg & Haertel, 1980). The material environment questions were modified to fit Com-Net's EDE setting.

The extension questions were developed after talking to several students who had been involved in extension programs and discussing their likes and dislikes about extension. These questions were reviewed twice by a university extension researcher and used in the two previously mentioned pilot tests. After the twenty questions for the four subscales were decided upon and refined for the EDE setting they were mixed so as to avoid repetition.

The alpha coefficient for individual students was used to measure internal consistency of the CUCEI and the LEI. The alpha coefficient for the material environment scale of the LEI was .65. The alpha coefficients for the two scales from the CUCEI were satisfaction = .87 and involvement = .70.

After completing data collection, Spearman-Brown reliability coefficients were computed for the scales used in the study, and the results corresponded with the reported alpha coefficients. The satisfaction scale had a coefficient of .87, the involvement scale had a coefficient of .74, and the material environment scale had a coefficient of .67.

Analysis

Correlation coefficients were computed to test the hypotheses of this study. The independent variables (motivational orientations) as measured by the E.P.S. were correlated with the dependent variables (satisfaction, material environment, involvement, and extension) as measured by the LEI and CUCEI.

One-way analyses of variance were computed to explore possible relationships with independent variables not included in the original hypotheses. These variables included the following: course; site; whether students studied with someone else, and if so how many others;

number of Com-Net, face-to-face, or on campus classes taken during the past three years; academic standing; sex; marital status; age; occupation; years at current job; and income.

Multiple regression analyses were used with satisfaction, material environment, involvement, and extension as dependent variables. Different possibilities were examined for possible explanations for these variables with EDE students.

The qualitative data from interviews and observations were recorded and analyzed to look for insights and possible explanations of the quantitative data. The responses from the dropouts and the reasons why they dropped out were analyzed and categorized.

Limitations

As is the case with any research study, there are limitations that should be considered when interpreting the results. There are limitations with the design, the sample, and the instruments in the study.

This study utilized a correlational design. Correlational procedures do not control the variables involved in the study but attempt to discover or clarify relationships that may exist among them (Borg & Gall, 1983). Data are collected on different variables, and then correlational coefficients are generated to discover if

relationships exist and how strong those relationships may be. These studies are inherently limited by the fact that causation cannot be inferred from the findings.

Sample problems arise from the limited offerings over the Com-Net systems. During Fall Quarter 1988 there were two bachelors degree programs, two masters degree programs, and one program for educators earning their administrative endorsement being offered over the Com-Net systems. The bachelor programs were in the areas of psychology and business administration. The masters programs were in the areas of education (master resource teacher) and human resource administration. Nearly all of the individuals involved in Com-Net are active degree-seeking students. These factors should be taken into consideration when generalizing to other EDE systems with differing programs.

A high percentage of those involved in the study were involved in the field of education as an occupation. Forty-seven out of 156 (30%) of those in the Com-Net group marked teacher/educator as their occupation. In the comparison group the percentage was twice as high. Fifty-two out of 85 participants (61%) marked teacher/educator as their occupation.

The subjects were located in rural areas of Utah. The cultural, political, and educational climates in this area are predominantly conservative. This fact may limit the generalizability of the study to other populations and settings.

CHAPTER IV

RESEARCH FINDINGS

Introduction

The purpose of this study was to explore relationships between students' motivational orientations and their perceptions of an Electronic Distance Education (EDE) learning environment. It was also intended to gather data on EDE participants so as to better determine who is participating in Utah State University's (USU) EDE systems.

This was accomplished by determining the students' motivational orientations using Boshier's (1982b) Education Participation Scale (E.P.S.), measuring their perceptions of the learning environment with portions of the Learning Environment Inventory (LEI) and the College and University Classroom Environment Inventory (CUCEI), and by gathering demographic and course data on the participants involved. Correlation coefficients were then computed to test the hypotheses. Descriptive statistics on the demographic data were also computed to obtain a profile of EDE participants.

This chapter will give an overview of the sample that was used. Findings about each of the hypotheses are next presented. Supplemental analyses dealing with findings indirectly related to the hypotheses are then discussed.

Information on the Sample

EDE students consisted of 156 subjects enrolled in two undergraduate and two graduate classes taught over USU's Com-Net systems during Fall Quarter of 1988. This group will be referred to as the EDE group throughout the presentation of the findings. The comparison group consisted of 85 subjects involved in three graduate and four undergraduate classes in rural Utah taught with an instructor physically present.

Table 4 gives a summary of participants' age, sex, and marital status for both the EDE and comparison groups.

Table 4

Summary of Participants' Age, Sex, and Marital Status

	EDE Group N=156	Comparison Group N=85
Mean Age	34.42	34.54
Median Age	34	34
Range Age	20-56	20-55
Females	81 52%	64 75%
Males	75 48%	21 25%
Married	107 69%	55 65%
Single	49 31%	30 35%

There appears to be one main area in which the EDE group differs from the comparison group. The comparison group was made up of 75% females, while the EDE group consisted of 52% female. Why there was a higher percentage of females in the comparison group is not known. Three of

the comparison group's classes had extremely high percentages of females. In one class, of the 14 students only 1 was male. In the other two classes, which had 22 students each, one class had 5 males and the other 6 males. In analyzing the data, the comparison group data were tested for a sex affect. No evidence was found to indicate that the higher percentage of females affected the data.

Table 5 gives a summary of participants' academic standing by class and degree.

Table 5

Summary of Participants' Academic Standing

Academic Standing	EDE Group N=156		Comparison Group N=85	
Freshman	7	4%	10	12%
Sophomore	5	3%	13	15%
Junior	26	17%	4	6%
Senior	45	29%	7	8%
Masters	53	34%	42	49%
Doctoral	5	3%	1	1%
Ad. Endor	15	10%	8	9%

One difference that appears between the groups as to their academic status is percentage involved in masters programs. Sixty percent of the comparison group were graduate students whereas 47% of the EDE group were graduate students. The reason the comparison group had a higher percentage of graduate students than the EDE group was that the three comparison group classes that had to be

dropped due to weather and instructor forgetfulness were undergraduate classes.

Participants were asked if they studied with other members of their class and, if they did, how many others did they study with. It was thought that perhaps some correlation may exist among individuals who studied with others and satisfaction and involvement scores.

In the EDE group 125 individuals (80%) indicated that they did not study with anyone else, while 31 participants (20%) said that they did study with others. Those who studied with other class members studied with an average of 2.94 others.

The comparison group reported 64 individuals (75%) who did not study with any other class members. Twenty-one participants said they did study with other class members. Those who studied with other class members studied with an average of 1.71 others.

In examining the data no significant correlations were found between studying with others and any of the other variables in the study. This held true for both the EDE group and the comparison group.

Participants were also asked how many EDE courses, face-to-face courses, and on-campus courses they had taken during the previous three years including the current classes. The Logan participants skewed the means for this question. A summary of the responses follows in Table 6.

For a complete summary of responses concerning the number of classes taken see Appendix M.

Table 6

Average Number of Courses Taken by Participants During Last Three Years

Type of Course Taken	EDE Group N=156				Comparison Group N=85			
	Mean	Median	Max	Min	Mean	Median	Max	Min
Com-Net	4.74	2	25	0	.84	1	15	0
Face-to-face	2.76	0	35	0	7.86	2	45	0
On Campus	6.83	0	60	0	.76	0	18	0

Participants were asked to check which occupation best described their current jobs. A summary of their responses follows in Table 7.

Table 7

Summary of Participants' Occupation

Occupation	EDE Group N=156		Comparison Group N=85	
	Count	Percentage	Count	Percentage
Teacher	47	30%	52	61%
Military	6	4%	0	0
Homemaker	11	7%	6	7%
Student	16	10%	8	10%
Office	20	13%	3	3.5%
Skilled	18	12%	3	3.5%
Other	38	24%	13	15%

As can be seen, twice as many participants (30% to 61%), came from the field of education. This may be the result of three undergraduate classes dropping out of the comparison group. In both the EDE group and the comparison group the majority of the educators are involved in masters programs. There were more masters degree participants in the comparison group, and there was also a higher percentage of participants involved in education.

For the EDE group, participants had an average mean of 8.22 years at their current occupation with a standard deviation of 6.15. The comparison group participants had an average mean of 6.59 years at their current occupation with a standard deviation of 4.93.

Table 8 gives a summary of the income data gathered from the participants.

Table 8

Summary of Participants' Income

Income	EDE Group N=156		Comparison Group N=85	
under \$10,000	24	15%	11	13%
10,001 - 14,999	15	10%	14	16%
15,000 - 24,999	51	33%	35	41%
25,000 - 34,999	46	29%	16	19%
35,000 - 44,999	11	7%	4	5%
45,000 - above	9	6%	5	6%

Findings Regarding Hypotheses

The following section lists each of the hypotheses in this study and the statistical results of the testing of each hypothesis.

Hypothesis One

Hypothesis One stated that adult learners who were involved in EDE classes would not be significantly different in their motivational orientation scores, as measured by Boshier's (1982b) E.P.S., from adult learners in more traditional, face-to-face educational settings. This hypothesis was tested in two ways. First the EDE sample's motivational orientation scores were compared to the motivational orientation scores from the comparison group. The EDE sample's scores were then compared to Boshier's E.P.S. norms for university-degree and graduate-school programs.

When comparing the EDE sample with the comparison group sample no significant differences were found among motivational orientation scores. Table 9 summarizes the comparison of the two groups.

Table 9

E.P.S. Scale Score Comparisons Between EDE Group and Face-to-face Comparison Group

E.P.S. Scales Group	EDE Group Means	Comparison Means
Social Contact	1.60	1.58
Social Stimulation	1.56	1.59
Professional Advancement	2.96	3.02
Community Service	2.15	1.99
External Expectations	1.68	1.78
Cognitive Interest	2.51	2.35

When comparing the EDE group's motivational orientation scores with Boshier's E.P.S. norms several differences were found. First, the EDE group's undergraduate E.P.S. scores were compared to Boshier's E.P.S. undergraduate university degree norms. By computing T scores, differences were found in the areas of social stimulation, professional advancement, and cognitive interest. Table 10 shows the comparison between the EDE undergraduates and the norms.

Table 10

E.P.S. Norms for University Degree Participants with EDE Undergraduate Group Means

E.P.S. Scales	EDE Group Undergraduate Means N = 83	E.P.S. University Degree Norms N = 1860
Social Contact	1.61	1.63
Social Stimulation	1.55*	1.71*
Professional Advancement	2.90**	2.21**
Community Service	2.11	2.04
External Expectations	1.60	1.58
Cognitive Interest	2.50**	3.12**

* indicates significant difference at $p < .01$; ** $p < .001$

When comparing the EDE graduate group's E.P.S. scale scores with Boshier's E.P.S. graduate norms, significant differences were found in the areas of professional advancement, external expectations, and cognitive interest. Table 11 compares the EDE graduate group's means with Boshiers' E.P.S. graduate norms.

Table 11

E.P.S. Norms for Graduate School Participants with EDE
Graduate Group Means

E.P.S. Scales	EDE Graduate Means N = 73	E.P.S. Graduate School Norms N = 874
Social Contact	1.59	1.63
Social Stimulation	1.57	1.67
Professional Advancement	3.03*	1.86*
Community Service	2.20	2.20
External Expectations	1.77*	1.39*
Cognitive Interest	2.52*	3.18*

* indicates significant difference at $p < .001$

Hypothesis One was rejected when compared to Boshier's norms. The EDE undergraduate students differed significantly from the norms in the areas of social stimulation, professional advancement, and cognitive interest. The EDE graduate students differed significantly from Boshier's norms in the areas of professional advancement, external expectations, and cognitive interest. These significant differences led to a rejection of hypothesis One.

Hypothesis Two

Hypothesis Two stated that there was no significant correlation among EDE students' perceived satisfaction as

measured by the CUCEI and their motivational orientations as measured by the E.P.S. Of the six correlation coefficients computed to test this hypothesis, one was significant at the .05 level, and three were significant at the .01 level. The significant correlation coefficients ranged from $-.174$ to $.406$. Although this led to the rejection of the null hypothesis the rejection must be viewed with caution. In terms of practical significance r values of $.258$, $.388$, and $.406$ have very little strength.

Table 12 lists the correlation coefficients among the six motivation orientation scales and satisfaction, material environment, involvement, and extension.

Table 12

Correlation Coefficients Between E.P.S. Scores and Scale Scores for the CUCEI, LEI, and Extension for EDE Group
N = 156

E.P.S. Scales	Satis- faction r	Material Environment r	Involvement r	Exten- sion r
Social Contact	.149	.032	.106	.111
Social Stimulation	.150	.013	.127	.064
Professional Advancement	.258**	.115	.213**	.133
Community Service	.388**	.102	.242**	.165*
External Expectations	$-.174^*$	$-.070$	$-.149$	$-.191^*$
Cognitive Interest	.406**	.183*	.381**	.278**

* indicates significant difference at $p < .05$; ** $p < .01$

Hypothesis Three

Hypothesis Three stated that there was no significant correlation among EDE students' perception of the material environment as measured by the LEI and their motivational orientations as measured by the E.P.S. For the six motivational orientation scales the correlation coefficients computed ranged from $-.070$ to $.183$. One of the six r values was significant at the $.05$ level of significance. Although this led to a rejection of the null hypotheses because of statistical significance, the very low correlation of $.183$ was not significant in a practical sense because of the very weak relationship indicated.

Hypothesis Four

Hypothesis Four stated that there was no significant correlation among EDE students' perception of their involvement in their EDE classes as measured by the CUCEI and their motivational orientations as measured by the E.P.S. For this hypothesis the six correlation coefficients ranged from $-.149$ to $.381$. Two scales had a significant correlation coefficient at the $.05$ level, and one scale had a significant correlation at the $.01$ level. Again, although statistically null hypothesis Four was rejected, the small correlation indicates very weak relationships.

Hypothesis Five

Hypotheses Five stated that there was no significant correlation among EDE students' perceptions of their extension experience and their motivational orientations. The correlation coefficients in testing this hypothesis ranged from $-.191$ to $.287$. Two correlation coefficients indicate significance at the $.05$ level and one at the $.01$ level. The statistically significant correlation coefficients of $-.191$, $.165$, and $.287$, although leading to the rejection of the null hypothesis, indicate very weak relationships and no practical significance.

Findings for Comparison Group

In comparing the comparison group's motivational orientations with the students' perceptions of satisfaction, material environment, involvement, and extension, the same pattern was shown as was indicated by the EDE group. Table 13 lists the correlation coefficients among the six motivation orientation scales and satisfaction, material environment, involvement, and extension for the comparison group.

Table 13

Correlation Coefficients Between E.P.S. Scores and Scale Scores for the CUCEI, LEI, and Extension for Comparison Group N = 85

E.P.S. Scales	Satisfaction r	Material Environment r	Involve- ment r	Exten- sion r
Social Contact	.110	-.289**	-.039	-.130
Social Stimulation	-.058	-.233*	-.103	-.135
Professional Advancement	.027	-.039	.202	.101
Community Service	.223*	-.273*	.151	.052
External Expectations	-.126	-.215*	-.069	-.096
Cognitive Interest	.206	-.100	.240*	.030

* indicates significant differences at $p < .05$; ** $p < .01$

Null hypotheses concerning satisfaction, material environment, and involvement were rejected due to correlation coefficients of .223 (significant at .05 level), .289 (significant at .001 level), and .240 (significant at .05 level). It is readily apparent that even though the null hypotheses were rejected, all of the above correlations show very weak relationships. The strongest r value of $-.289$ produces an r^2 of only .084. This means that only 8.4 % of the variance can be explained between the two variables being correlated.

With the comparison group the area of extension produced no significant correlation coefficients. With regards to extension and the comparison group, the null hypothesis was retained.

Findings for Multiple Regression Analysis

In an attempt to better understand student satisfaction, material environment, involvement, and extension, multiple regression analyses was used with these variables as the dependent variables. The participants' E.P.S. scores were used as a set of six independent variables with course and demographic variables as another set of fourteen independent variables. With four dependent variables and two separate sets of independent variables, which were calculated on both the EDE and comparison groups, a total of sixteen regression equations were computed. A summary of the sixteen r-squared coefficients from the multiple regression equations follows in Table 14.

Table 14

Summary of Multiple r^2 Coefficients for Sixteen Regression Equations with Satisfaction, Material Environment, Involvement, and Extension as the Dependent Variables and E.P.S. Scores and Demographic and Course Variables as the Independent Variables

Dependent Variables	Independent Variables			
	Com-Net Group		Comparison Group	
	E.P.S.	Demographic	E.P.S.	Demographic
Satisfaction	.292	.217	.151	.195
Material Environment	.054	.129	.119	.342
Involvement	.201	.141	.186	.165
Extension	.139	.146	.094	.105

The very low r-squared values indicate that the E.P.S. scores, course, and demographic variables accounted for very little of the explained variability in the dependent variables.

Findings Ancillary to the Hypotheses

In comparing students' perceptions of their EDE learning environment with the perceptions of students involved in a more traditional face-to-face extension setting, several interesting observations were noted. In examining student satisfaction between an EDE environment and a face-to-face setting, a one-way analysis of variance revealed a significant difference at the .015 level. The

mean satisfaction score for the comparison group was significantly higher than the EDE group's satisfaction mean score.

In the areas of involvement and extension, one-way analyses of variance revealed significant differences, with the comparison group having significantly higher mean scores. Only in the area of material environment was no difference found between the groups. Table 15 gives a summary of the one-way analyses of variance on satisfaction, material environment, involvement, and extension scores by method (EDE versus comparison group). For the complete tables of the one-way analyses see Appendix L.

Table 15

Summary of Analysis of Variance on Satisfaction, Material Environment, Involvement, and Extension Scores by Method

	Method	
	F	p
Satisfaction	6.02	.015
Material Environment	.67	.415
Involvement	29.31	.001
Extension	8.66	.004

One-way analyses of variance comparing the different sites revealed significant differences in the areas of

material environment, involvement, and extension. The area of satisfaction revealed no significant differences. Table 16 outlines the results from these four one-way analyses of variance.

Table 16

Summary of Analysis of Variance on Satisfaction, Material Environment, Involvement, and Extension Scores by Site for EDE Group

	Site	
	F	p
Satisfaction	1.57	.108
Material Environment	3.07	.001
Involvement	2.00	.028
Extension	5.49	.001

In comparing the EDE group by course, one-way analyses of variance showed significant differences in the areas of satisfaction, involvement, and extension. Only in the area of material environment were no significant differences found.

In comparing the comparison group by course, one-way analyses of variance showed significant differences in the areas of satisfaction and material environment. The areas of involvement and extension showed no significant differences. Table 17 gives a summary of the one-way

analyses of variance for course for the EDE and comparison groups. For the complete tables of the one-way analyses see Appendix L.

Table 17

Summary of Analysis of Variance on Satisfaction, Material Environment, Involvement, and Extension Scores by Course for EDE Group and Comparison Group

	Course			
	EDE Group		Comparison Group	
	F	p	F	p
Satisfaction	11.57	.001	7.12	.001
Material Environment	1.21	.308	2.28	.036
Involvement	7.97	.001	1.12	.358
Extension	4.34	.006	.72	.659

In examining the correlations between satisfaction, material environment, involvement, and extension for the EDE group, several significant relationships were discovered. All of the correlation coefficients except one were significant at the .001 level, and some of the correlations held practical significance. Involvement scores and satisfaction scores had an r value of .685. Material environment scores and satisfaction scores had a correlation coefficient of .526. A summary of the r values follows in Table 18.

Table 18

Correlation Coefficients Between Satisfaction Scores, Material Environment Scores, Involvement Scores, and Extension Scores for EDE Group N = 156

	Satisfaction	Material Environment	Involvement
Material Environment	.296*		
Involvement	.685**	.351**	
Extension	.526**	.430**	.490**

* indicates significant differences at $p < .01$; ** $p < .001$

In examining the correlations between satisfaction and involvement for the comparison group, a correlation coefficient of .405 was obtained. This would produce an r^2 of .16. The EDE r value for satisfaction and involvement was .685, which produced an r^2 of .47. This is a significant difference. It appears that involvement has a stronger relationship with satisfaction in an EDE setting than in a face-to-face setting.

Findings Concerning Dropouts

In an attempt to determine if those who dropped out of the EDE classes differed in their motivational orientations from learners who completed the classes, information was gathered from the dropouts. A list of all students who had dropped out of the classes involved in the study was obtained the ninth week of the quarter. Each dropout was

mailed the E.P.S. along with the demographic questionnaire and a questionnaire asking the individual to indicate why they found it necessary to drop the class (see Appendix J). A second mailing was sent out two weeks following the first mailing. Inasmuch as Christmas came ten days after the second mailing, no third mailing was attempted.

Out of 12 reported dropouts from the EDE group, 9 were heard from, for a return rate of 75%. Out of the 20 reported dropouts from the comparison group, 16 were heard from for a return rate of 80%. In all, 25 out of 32 listed dropouts were heard from for an overall return of 78%.

In both the EDE and comparison groups 4 individuals who were listed as dropouts responded and claimed not to be dropouts. Two people listed as Com-net dropouts said they never signed up for the class in question. Two other Com-Net dropouts discovered after the first week of the quarter that the same course with the same professor was being taught by face-to-face extension on another evening at a center only a 45-minute drive away. They then switched from the EDE class to the face-to-face class.

Of the 4 listed dropouts who claimed not to have dropped out from the comparison group, 3 said they never did sign up and 1 said she never did drop out but finished the class with credit. After these 8 individuals were subtracted from the dropout respondents, only 5 were left in the EDE group and 12 in the comparison group. With

insufficient numbers to run reliable statistics, all of the dropout respondents' motivational orientations were compared with the motivational orientations of both groups. Recall that there were no significant differences in the motivational orientations between the EDE group and the comparison group. Table 19 compares the motivational orientation scores of the dropouts with those participants who did not drop out of the classes.

Table 19

E.P.S. Scale Score Comparisons Between Dropouts and Non-dropouts

E.P.S. Scales	Non-dropouts Means N = 241	Dropout Means N = 17
Social Contact	1.59	1.48
Social Stimulation	1.57	1.64
Professional Advancement	2.98	3.03
Community Service	2.09	2.31
External Expectations	1.71	1.83
Cognitive Interest	2.45	2.45

T tests indicate no significant differences between any of the six pair of means. The reasons given by the respondents for dropping out of the classes and their comments concerning Utah State University's extension

programs are summarized in Table 20. For a complete listing of all responses see Appendix K.

Table 20

Summary of Dropout Responses

Question Asked: Why did you decide to withdraw from the class?

1.	Not real dropouts:	
	a. Did not drop out, finished class with credit.	1
	b. Never signed up for class in question.	<u>5</u>
	Total	6
2.	Extension and scheduling concerns:	
	a. Discovered already taken under a different number.	1
	b. Found out did not need for program involved in.	3
	c. Scheduling change after initial sign up or wrong information given on dates and times.	<u>5</u>
	Total	9
3.	Switched from Com-Net to the same class taught face-to-face at a center nearby.	2
4.	Outside pressures of time, work and life.	6
5.	Could not come up with tuition.	1
6.	Became disgusted with whole college system.	<u>1</u>
	Total	25

Question asked: How did you feel about the class during the time you attended?

1.	Very positive, felt good about the experience.	10
2.	No comment, did not attend or attended only once.	9
3.	Negative.	<u>0</u>
	Total	19

Question asked: Would you ever sign up for another USU Com-Net or extension class?

1. Yes.	16
2. Would only take Com-Net if no other way.	2
3. No.	<u>0</u>
Total	18

Question asked: How do you feel that you have been treated by Utah State University extension services?

1. Fine to excellent.	15
2. Alright to okay.	2
3. Poor to major complaints.	<u>2</u>
Total	19

Question asked: Any other comments you would like to make about your experiences with Utah State University?

1. Very grateful for opportunity of extension.	5
2. Better communication between University and extension.	3
3. Complaints typical of any college or program.	<u>2</u>
Total	10

One question that surfaced in examining dropouts was why the EDE group had such a low percentage of dropouts? There were 8 actual dropouts out of 186 enrollments in the Com-Net group, a percentage of 4.3%. In the comparison group there were 16 actual dropouts out of 104 enrollments, a percentage of 15.4%.

There appear to be two possible explanations for this difference. Some Com-Net sites have developed a practice of letting students sign up and put their names on the

rolls of a class for the first three weeks without officially registering and paying. They list these students on the rolls as not registered. The regular extension face-to-face classes do not allow this. There were 9 students not registered in the Com-Net classes who started, dropped out, and never registered. Counting these 9 students as dropouts would leave Com-Net with 17 dropouts out of 186 enrollments for a percentage of 9.1%.

Out of the 20 dropouts from the comparison group, 9 came from one class. The reasons listed were scheduling changes, discovered they did not need this class for their program, and the teacher expected too much work as reasons for withdrawal. Had this class had 2 dropouts, which was average for all of the other classes, the comparison group would have had 9 dropouts out of 104 enrollments for a percentage of 8.7%. This would have been in line with Com-Net's 9.1%.

Findings for Interviews and Observations

In an attempt to add some depth and understanding to the quantitative data, some qualitative data were gathered. Several interviews of EDE students were conducted along with interviews of extension secretaries. The EDE classes involved in the study were also observed.

The researcher conducted the interviews and observations. He has been a teacher for twelve years and

is trained as a counselor, a classroom observer, and teacher consultant. For a complete list of interview and observation notes see Appendix H.

The following is a list of the major points that surfaced in the interviews. No attempt was made to try to quantify the interviews. Insufficient numbers were interviewed to allow doing so. One woman and four men were interviewed at length along with two extension secretaries who deal with large numbers of EDE students. Several other Com-Net students were visited with before and during the classroom observations. The following general observations were made from the interviews.

The EDE students were very quick to praise the system for the opportunity it gave them to pursue their education. Everyone interviewed reported that if it were not for Com-Net they could not be involved in their current college program. All of the individuals worked full time and were involved in evening Com-Net classes.

There seemed to be a general feeling that Com-Net classes are not as good as regular extension classes. The interviewees said that if they had a choice between a Com-Net class and a face-to-face class they would take the face-to-face class. They were quick to say, though, that Com-Net was much better than nothing.

The secretaries who registered people for extension classes remarked that individuals were never as excited

about signing up when they found out they were signing up for a Com-Net class. One secretary indicated that after their initial complaining, the individuals almost always signed up.

The researcher was in the evening school office as three men came in within an hour's time to sign up for a class. All three, upon learning that the class they wanted was being taught over Com-Net, complained. Two signed up for the class anyway saying that they needed the class for their programs. The third individual did not sign up and said he would wait another quarter to see if maybe he could pick up this class some other way.

Many of the people involved in the study were from the field of education. These people seemed very motivated for an advanced degree so they could obtain a pay raise and possibilities for different employment opportunities. Those non-education majors interviewed also indicated that they were desirous to upgrade their current employment.

The frustrations expressed by the learners seem to be non-EDE related. Although some of the frustrations initially expressed were aimed at the Com-Net system (not very good picture, too slow in getting tests back, etc.), after discussion it seemed their real frustrations were in trying to find time for homework and uninterrupted study, family and work demands, and the frustrations of schooling.

The following general observations were made from the classroom observations. The teachers seemed to have a tremendous impact on the amount of involvement within the EDE class. One instructor lectured for an hour in a monotone voice and never asked a question or called for a response. The students in this class at a rural site were observed to be involved in numerous activities during this portion of the class. One student was very attentive. Two students ate full meals. Two other students made several trips to the pop and candy machine, while another student spent part of his time out in the hall smoking. Very little involvement was sensed, and, after a quiz was given halfway through the class, one student immediately left, and the others came back ten minutes late after the break.

In another class the instructor asked many questions. He not only waited for answers but would call on people by name and by site. He did not pick out one or two students but during class called on many people from all of the sites. Often he did not have to call on people. Many freely responded to his questions. It was a good classroom discussion carried on over a good part of the state of Utah.

In two other classes, a similar pattern was observed. There was very good interaction across the Com-Net lines. At one remote site, attended by two men and a woman, all had commented or asked a question within the first hour of

class. They were very attentive, involved, and seemed to be enjoying themselves.

The students appeared to be very adaptable and comfortable in a wide variety of physical settings. At one site that was old and noisy, no one appeared to be distracted. The students said that after several classes in a certain location, you can get used to anything.

Summary

For the most part, the null hypotheses in this study were rejected. A summary of the null hypotheses and the results follows.

Hypothesis One stated that adult learners who were involved in EDE classes would not be significantly different in their motivational orientation scores from adult learners in more traditional face-to-face settings. This hypothesis was rejected when compared to Boshier's E.P.S. norms.

Hypothesis Two, that there was no significant correlation among EDE students' perceived satisfaction as measured by the CUCEI and their motivational orientations as measured by the E.P.S., was rejected. Four of the six motivational orientations showed significance.

Hypothesis Three, that there was no significant correlation among EDE students' perceived material environment as measured by the LEI and their motivational

orientations as measured by the E.P.S., was rejected. One of the six motivational orientations showed significance.

Hypothesis Four, that there was no significant correlation among EDE students' perceived involvement as measured by the CUCEI and their motivational orientations as measured by the E.P.S., was rejected. Three of the six motivational orientations showed significance.

Hypothesis Five, that there was no significant correlation among EDE students' extension perceptions and their motivational orientations as measured by the E.P.S., was rejected. Three of the six motivational orientations showed significance.

Although hypotheses two through five were all rejected, these rejections must all be viewed with caution. With a sample size of $N=156$ a correlation coefficient of .159 is significant at $p<.05$ and an r value of .208 is significant at $p<.01$. Of the twenty-four correlation coefficients computed to test these hypotheses, six were significant at $p<.05$ and five were significant at $p<.01$. The largest r value was .406, but there were only two other r values higher than .258. None of the correlations had any practical significance because of the very weak relationships involved. This again indicates that the rejections of the null hypotheses must be viewed with caution.

In analyzing the comparison group for hypotheses two through five similar results were found. For the areas of satisfaction, material environment, and involvement, the null hypotheses, that there were no significant correlations among students motivational orientation scores and these areas, were rejected. Only the hypothesis testing the correlations with extension scores was not rejected. Of the twenty-four correlation coefficients computed to test the comparison group, five were significant at the $p < .05$ level and only one was significant at the $p < .01$ level.

The rejections of the null hypotheses with the comparison group must also be viewed with caution. With a sample size of $n=85$ a correlation coefficient of .213 is needed for significance at the $p < .05$ level, and an r value of .278 is significant at the $p < .01$ level. The highest correlation coefficient of the comparison group's correlations was $-.289$. No practical significance can be attributed to any of the r values this small due to the weak relationships.

It can be pointed out that there were eleven significant correlations with the EDE group and six with the comparison group. When comparing correlations significant at the $p < .01$ level the EDE group had seven while the comparison group had only one. Also satisfaction scores had the most significant correlations and the

highest correlations with motivational orientation scores when compared to the other three areas.

In comparing the EDE group with the comparison group, significant differences were found in the areas of satisfaction scores, involvement scores, and material environment scores. The EDE group scores were significantly lower in all of these areas.

In comparing the EDE group by the different courses significant differences were found in the areas of satisfaction scores, involvement scores, and material environment scores. The course highest in satisfaction scores was the highest in all of the other scores, the course with the second highest scores had the second highest scores in all of the areas. This same trend continued for the other two classes.

When comparing the different EDE sites, material environment scores, involvement scores, and extension scores were all statistically significant. Satisfaction scores were not significantly different when comparing sites. In the comparison group, satisfaction and material environment scores were significantly different when analyzed by course.

In summarizing the interview data three main observations were made. First, the EDE students were very appreciative of being able to continue their education. Second, there is a perception that the EDE experience is

less than favorable. Third, some of the frustrations expressed by the EDE students stemmed from the pressures of being a part-time student.

The observation conclusions began with the impression that the teacher has a tremendous influence on the amount of student involvement. Students also appeared to be very adaptable to a wide variety of physical settings.

In individuals who dropped out of EDE classes, motivational orientations did not differ from those who did not drop out. Time, home, and work demands seemed to be the major reasons why they discontinued their EDE classes.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Problem

Modern society has created an environment that has far-reaching implications for adult education (Boshier, 1985; Boulding, 1964; Darkenwald & Merriam, 1982; Hallenbeck, 1964; Naisbitt, 1982). With the constant stream of new information that brings rapid change, our adult population requires more education and training than ever before.

This expanded demand for lifelong learning is creating the need for non-traditional educational delivery systems (Johnston, 1987). Many individuals desiring further education are located in remote areas where they do not have access to university campuses or continuing education programs.

Several institutions, in an attempt to meet the growing needs of remote potential clientele, have turned to Electronic Distance Education (EDE) (Calvert, 1986; Hudspeth & Brey, 1986; Seamons, 1987a). Technological advancements have increased the ability of institutions to provide educational offerings to individuals previously unable to participate in continuing formal education. Many of these students are very motivated in their new learning environments as they try to keep up in an ever-changing world.

In EDE, students find a learning environment different from traditional classroom experiences. The teacher is not physically present in the classroom, instruction is presented via some form of electronic media, and class members are scattered over hundreds or thousands of miles.

In examining the current EDE landscape, it is easy to become lost and confused by all the electronic jargon and innovations. One must be continually reminded that the heart of EDE is not the hardware or software of the system but the internal change occurring in the individual learner (Burnham & Seamons, 1987). Many new electronic methods and specialized techniques may be created and presented, but learning is a process that can take place only within the individual learner (Verner, 1962; Travers, 1982).

The common measurements of educational success (grades, credit hours completed, etc.) may not tell the whole story in an EDE environment. Students may be obtaining satisfactory grades in their EDE courses, but are they having positive educational experiences in the process? Satisfactory grades may be due to some internal motivational factor that is forcing students into this new educational environment. Some researchers feel that motivated students learn from any medium, and in many instances students learn not from the medium or system used but in spite of it (Coldeway, 1986; Schramm, 1973).

Inasmuch as highly motivated learners may endure any educational environment or process to achieve a passing grade, more than grades need to be examined to evaluate educational experiences of individual students. How satisfied is the individual learner with his or her educational experience with an EDE system? How does the motivational orientation of the learner correlate with the learner's perceptions and satisfaction with the educational environment? Is the EDE learning environment more attractive to learners from a particular motivational orientation? These questions were explored in an attempt to examine learning experiences individuals are having with an EDE system.

Summary of Methodology and Setting

Subjects were 156 participants (81 women, 75 men; 83 undergraduates, 73 graduate students) enrolled in Utah State University's electronic distance education system, Com-Net, which offered 30 courses for 98 credit hours to 1188 enrollments Fall Quarter 1988. At present there are 17 outreach centers throughout Utah and southwestern Wyoming, with three additional centers at the Utah State Penitentiary (see Appendix B). The hub of operations lies at Utah State University in Logan, Utah, from where the classes are distributed to the different outreach sites.

Com-Net services consist of two major dimensions: the delivery devices or hardware and the infrastructure of human support personnel and staff. These two dimensions operate together to help create a unique educational method.

To better understand the findings of the EDE group involved in this study a comparison group was utilized that consisted of 85 participants (64 females, 21 males; 34 undergraduates, 51 graduates) from rural Utah enrolled in Utah State University extension programs. These students were from seven classes that were taught by the traditional method with an instructor physically present.

The independent variables in this study were the motivational orientations of the participants and demographic and course data. The dependant variables were the participants' perceptions of the learning environment in the areas of satisfaction, material environment, involvement, and extension.

The motivational orientations of the subjects were measured using Boshier's (1982b) Education Participation Scale (E.P.S.). The E.P.S. was selected because it has been shown to be factorial stable over time and place, factorial pure, economical, and free of passenger items (Clarke & Boshier, 1981; Boshier, 1976). It has also been shown to be reliable and valid (Boshier, 1971; Haag, 1976;

Morstain & Smart, 1974). It consists of 40 items cast on a 4-point Likert (no influence...much influence) scale.

The participants' perceptions of the learning environment were measured using the material environment subscale from the Learning Environment Inventory (LEI), the satisfaction and involvement subscales from the College and University Classroom Environmental Inventory (CUCEI), and an extension scale developed by the researcher. Subjects also completed a questionnaire eliciting information concerning course; location; whether they studied with other students; number of EDE, extension, and on campus classes taken during last three years; academic status; sex; marital status; age; occupation; years at current occupation; and current income.

Correlation coefficients were computed to test the hypotheses of this study. The independent variables (motivational orientations) as measured by the E.P.S. were correlated with the dependent variables (satisfaction, material environment, involvement, and extension) as measured by the LEI and CUCEI. One-way analyses of variance were computed to explore possible relationships with independent variables not included in the original hypotheses. Multiple regression analyses were used with satisfaction as the independent variable to look for possible explanations of student satisfaction.

Summary of Results

The problem investigated concerned the relationships between participants' motivational orientations and their perceptions of an EDE environment. There were five hypotheses tested in this study. All hypotheses tested on the EDE group were also tested on the comparison group. For the most part the null hypotheses in this study were rejected. A summary of the null hypotheses and the results follows.

Hypothesis One stated that adult learners who were involved in EDE classes would not be significantly different in their motivational orientation scores from adult learners in more traditional face-to-face settings. Although the motivational orientations of the EDE group did not differ from the comparison group, they did differ significantly in the areas of professional advancement and cognitive interest from Boshier's E.P.S. norms. Hypothesis One was rejected.

Hypothesis Two, that there was no significant correlation among EDE students' perceived satisfaction as measured by the CUCEI and their motivational orientations as measured by the E.P.S., was rejected. Four of the six motivational orientations showed significance.

Hypothesis Three, that there was no significant correlation among EDE students' perception of the material environment as measured by the LEI and their motivational

orientations as measured by the E.P.S., was rejected. One of the six motivational orientations showed significance.

Hypothesis Four, that there was no significant correlation among EDE students' perceived involvement as measured by the CUCEI and their motivational orientations as measured by the E.P.S., was rejected. Three of the six motivational orientations showed significance.

Hypothesis Five, that there was no significant correlation among EDE students' perception of their extension experience and their motivational orientations as measured by the E.P.S., was rejected. Three of the six motivational orientations showed significance.

Although hypotheses two through five were all rejected, these rejections must all be viewed with caution. With a sample size of $N=156$ a correlation coefficient of .159 is significant at $p<.05$ and an r value of .208 is significant at $p<.01$. Of the twenty-four correlation coefficients computed to test these hypotheses, six were significant at $p<.05$ and five were significant at $p<.01$. The largest r value was .406, but there were only two other r values higher than .258. None of the correlations showed much strength in the relationships and had no real practical significance. This again indicates that the rejections of the null hypotheses must be viewed with caution.

In analyzing the comparison group for hypotheses two through five similar results were found. For the areas of

satisfaction, material environment, and involvement, the null hypotheses, that there were no significant correlations among students motivational orientation scores and these areas, were rejected. Only the hypothesis testing the correlations with extension scores was not rejected. Of the twenty-four correlation coefficients computed to test the comparison group, five were significant at the $p < .05$ level and only one was significant at the $p < .01$ level.

The rejections of the null hypotheses with the comparison group must also be viewed with caution. With a sample size of $n=85$ a correlation coefficient of .213 is needed for significance at the $p < .05$ level and an r value of .278 is significant at the $p < .01$ level. The highest correlation coefficient of the comparison group's correlations was $-.289$. No practical significance can be attributed to any of the r values this small.

It can be pointed out that there were more significant correlations (11) with the EDE group than with the comparison group (6). When comparing correlations significant at the $p < .01$ level the EDE group had five while the comparison group had only one. (For a complete listing of the correlations see tables 12 and 13.)

Satisfaction and involvement scores had the most significant correlations (3 at $p < .01$) of the variables tested and the highest correlations with motivational

orientation scores. In the comparison group, satisfaction and involvement scores each had one significant correlation at the $p < .05$ level. This suggests that in the EDE setting, motivational orientations had a stronger relationship with involvement and satisfaction than in the more traditional setting. Again, although the relationship is stronger, it is still weak.

In supplemental analyses, several significant differences were found between the EDE group and the comparison group. The comparison group had statistically significantly higher scores in the areas of satisfaction, involvement, and material environment. The EDE group scores were statistically significantly lower in all of these areas.

In comparing the EDE group by the different courses, significant differences were found in the areas of satisfaction scores, involvement scores, and material environment scores. The course highest in satisfaction scores also had the highest material involvement, involvement, and extension scores. The course with the second highest satisfaction scores, also had the second highest material involvement, involvement, and extension scores. This same trend continued for the other two classes.

When comparing the different EDE sites, material environment scores, involvement scores, and extension

scores were all statistically significant. Satisfaction scores were not significantly different when comparing sites. In the comparison group satisfaction and material environment scores were significantly different when analyzed by course.

In summarizing the interview data three main observations were made. First the EDE students were very appreciative of being able to continue their education. Second, there is a perception that the EDE experience is second rate. Third, the frustrations expressed by the EDE students were similar to other part-time adult learners.

The observation conclusions began with the assertion that the teacher has a substantial influence on the amount of student involvement. Students also appear to be very adaptable to a wide variety of physical settings.

In examining individuals who dropped out of their EDE classes, motivational orientations appeared not to be a factor in their decision to withdraw. Time, home, and work demands seem to be the major reasons why they discontinued their EDE classes.

Discussion of Findings

In the rejection of Hypothesis One, that adult learners who were involved in EDE classes would not be significantly different in their motivational orientation scores from adult learners in more traditional face-to-face settings,

what was found was a difference between USU extension students and the national norms. Although the motivational orientations of the EDE group did not differ from the comparison group, they did differ significantly in the areas of professional advancement and cognitive interest from Boshier's E.P.S. norms.

The USU students' professional advancement scores were much higher than the norms for both undergraduate and graduate students. The interview data suggest that many of the subjects were very degree motivated. Everyone who was interviewed expressed the fact that the possibility of obtaining a degree was the main enticement for their participation in the EDE or extension program.

This may be one of Com-Net's strengths. Whereas many distance education programs have severe dropout problems, Com-Net does not. The possibility of obtaining a bachelors or a masters degree while retaining current employment is not only tremendously appealing but seems to keep individuals coming back until completion.

Another factor affecting the high professional advancement scores was the number of participants involved from the field of education. Ninety-nine out of 241 (41%) of the subjects in the study listed education as their occupation. Many of Com-Net's graduate programs are in education. They form a population that is very graduate

school oriented to improve their financial situations and job possibilities.

One-way analysis of variance showed that the educators as a group were significantly higher in their professional advancement scores than any of the other occupations. This may result from the desire of educators to obtain advanced degrees for the purpose of higher pay and increased opportunities for administrative opportunities.

Why participants' cognitive interest scores are so much lower than the norms is not as easy to answer. It may be that many individuals' desire for the degree is much greater than the desire for learning. The researcher has come in contact with many in education who see learning as the necessary hurdle required for the attainment of the degree. Possibly the busyness of life overshadows the luxury of learning.

The nature of the questions and the structure of the E.P.S. may have led to the low scores on the cognitive interest scales. Although the scores were compared to degree undergraduate and graduate norms, no norms were given for part-time undergraduate and graduate students. The majority of the participants in this study were part-time students. The courses being taken were being used to fulfill degree requirements. When a student in this situation is asked if he enrolled in this class to seek

knowledge for its own sake, he may answer differently than a full-time student who is enrolled in an elective.

The material environment did not seem to be much of a factor in this study. Even though it had a significant correlation coefficient of .296 with satisfaction, this r value is very weak and is not practically significant.

Recommendations

There are questions and areas that need further investigation with the Com-Net system. The following is a list of some of these areas.

1. Research involving student and teacher interaction over the Com-Net system could be conducted to see how these factors relate to student involvement and satisfaction. Subsequent techniques and devices may be discovered and developed that could enhance a teacher's effectiveness over an EDE system.

2. A study needs to be conducted on how support staff can help facilitate better instruction. The human element is critical in an EDE setting. Recently, in budget cutbacks, Com-Net has lost several key support staff positions. The system should be carefully monitored to determine the effects of these cutbacks. Such cutbacks may prove to be unfortunate.

3. Certain Com-Net sites had significantly lower scores in the areas of satisfaction, material environment,

and extension. As a practical matter, these sites should be investigated, the situation appraised, and recommendations made and followed through on in order to improve those sites.

4. Com-Net has made promising growth over its first four years. A data base could be developed and continued to help track students who begin programs. Students' progress could be monitored and needs kept current. Some data has been collected, but it has not been coded nor is it of a uniform nature.

5. Further investigation could be conducted to better determine which external variables help lead to improved student satisfaction and performance. It may just well be that the human factor is much more important than heretofore thought.

6. A careful investigation of instructors could be conducted over the Com-Net system. Seamons (1987b) showed that there was a correlation among teaching styles and student satisfaction and performance. More could be done in this area to see which teaching styles help promote student satisfaction and performance.

Conclusion

There appears to be little practical relationship between motivational orientations and participants' satisfaction. This corresponds with Clarke's and Boshier's

(1981) findings when they examined 222 students involved in non-credit courses in British Columbia. This dissertation examined students involved in credit undergraduate and graduate courses who were also involved in an EDE and regular face-to-face environment. These groups together with Clarke's and Boshier's group give some evidence that this finding may hold up across different learning environments and settings.

In some ways, the fact that motivational orientations failed to account for significant amounts of participant satisfaction is a heartening result for those involved in adult education. This may challenge some fundamental beliefs. It has been presumed that programs and environments tailored to the needs, motives, and expectations of learners will result in higher participant satisfaction than those involving minimal consultation between learners and instructors. These results suggest that participant satisfaction is largely independent of the initial motives that impelled these individuals to participate. Motivational orientations' minimal impact on participant satisfaction may suggest that the sources of variation in satisfaction lie elsewhere. There may be other internal variables that affect satisfaction, but more probably there are external variables, such as the instructor, that greatly influence satisfaction. Adult characteristics may not have much to do with satisfaction.

Those factors that influence good instruction may be generally universal across environments and populations (Clarke & Boshier, 1981).

A more significant factor with satisfaction is the correlation coefficient with involvement of .685. It was of interest to note that the class that the observations revealed had the most student involvement (in the way of verbal interactions between sites and between students and the instructor) also had the highest mean involvement score and the highest mean satisfaction score of the EDE classes. The class that had the least amount of verbal interaction across the system also had the lowest involvement scores and the lowest satisfaction scores.

The observation data suggested that the instructor was a major factor in determining the involvement level of the class. It may just be that the instructor plays a major role in not only involvement but also in the satisfaction of the EDE students. This study suggests that the instructor has a much stronger correlation with involvement and satisfaction than the material environment.

From the observations, it was felt that the EDE system exaggerates an instructor's weaknesses. If an instructor is boring in a face-to-face setting, he can reach undescrivable depths of insipidness coming across the phone lines. A monotone voice is harder to concentrate on from a distance than from within the same room.

It seems a great deal of time and money is being spent on the hardware and the software of EDE systems, but developers may be missing the quickest and cheapest way to improve the learning environment. Time, money, and energies need to be extended on teacher development over EDE systems.

EDE provides numerous challenges and opportunities for the present and future. As more time, energy, and monies are focused in the direction of EDE, care must be taken not to overlook simple things. As new innovations come along with untested track records and expense, caution must be observed so that newer is not always considered better.

The teacher is still the most important element in any teaching endeavor. Perhaps too much attention is being focused on the hardware of EDE and not enough on the human element and the teacher. Time, energy, and monies, spent on helping teachers adapt and improve, may give the highest rate of return of any investment that could be made.

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APPENDICES

Appendix A

Fall Quarter 1988 Com-Net Projected Enrollments

FALL QUARTER 1988 COM-NET PROJECTED ENROLLMENTS

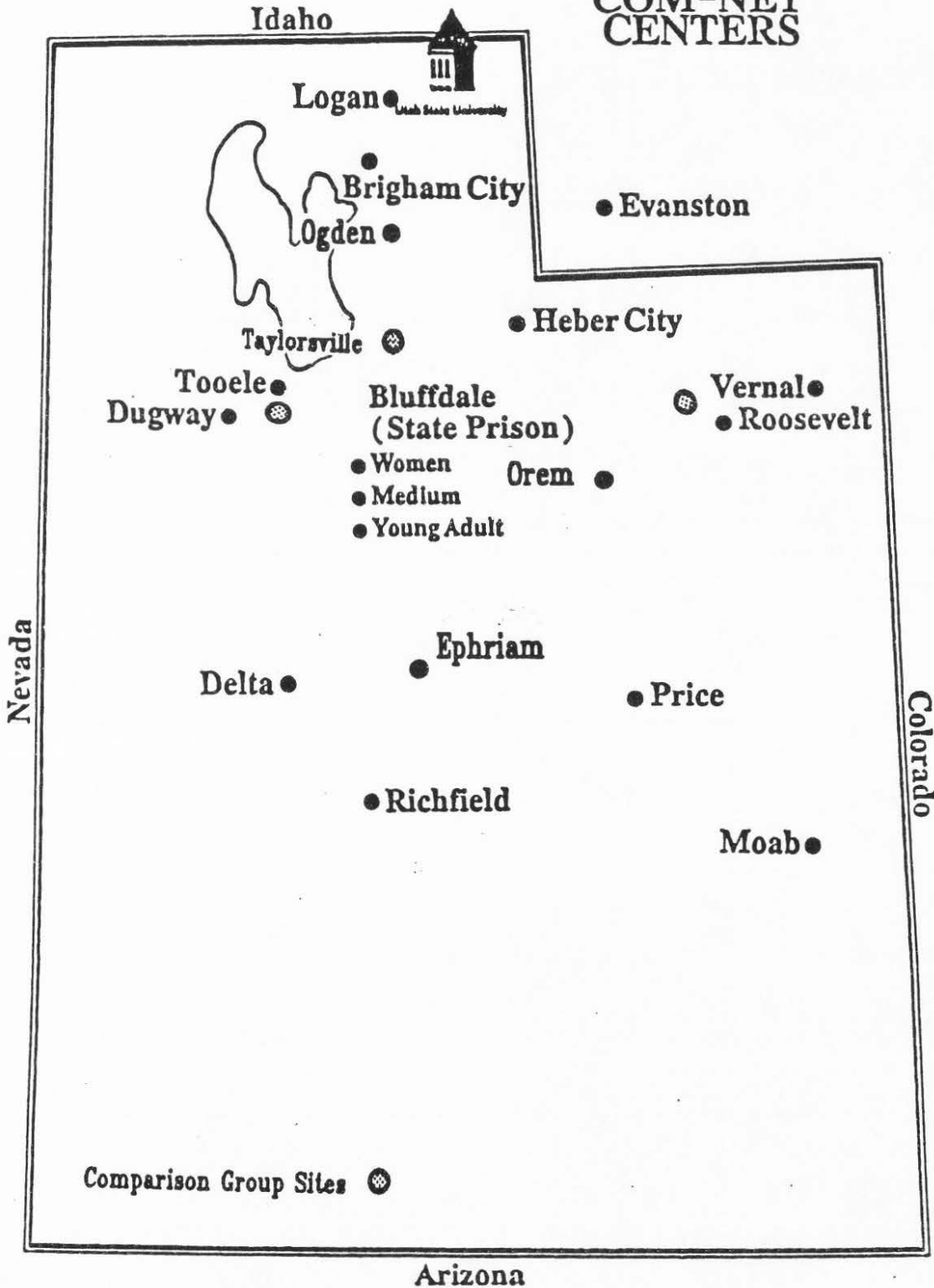
CENTER	Day A-NET						Evening A-NET						Day V-NET				Evening V-NET						Pre-Fall										
	Chem	Eng	Eng	Math	Acct	Hist	Acct	BA	BA	Econ	Hist	Hist	Math	Pay	Pay	Com	Hist	Phys	Pay	Sec	BA	Com	Econ	Ed	Ed	Ed	Ed	Pay	Sp	Ed	PHD	Pay	
	111	115	200	202	201	433	607	311	321	335	200	610	735	210	351	372	260	104	108	122	240	605	325	624	608	750	100	400	101	376	412	173	
CREDIT	5	3	3		3	3	3	4	3	4	5	3	3	3	3	3	3	3	3	3	3												
BLUPP E	5	4	4	6				3	3	3	3	3	3	3	3	3																	
BLUPP N	9	5	5	15																													
BLUPP S	6	10	16	18													10	10	5	15	12												
BRIHAM	3	3	4	3	6		2	3	3	3	4	4	4	3	3	3																	
CEU/PRICE							2																										
CRAIG																																	
DELTA							2	2	2	2		2	2		2	2																	
DUWAY							6					3	3	3	3	3																	
EVANSTON	2	4	4	1		2		4	1	1		5	3	2		2																	
HILL AFB	3	2	2	3	10		4	3	4	4	4	12	12	4	6	6																	
LOAN	4	3	5	5	5	4	5	4	6	6	3	3	3	4	6	6	4	3	8	4													
MEEKER																																	
MOAB					4				3	3	6				3	3																	
RICHFIELD								1	4	4	3	2	2		1	2																	
ROOSEVELT		2			6	2	1	3	3	3	3	1	1		3	3	2		1	2	2												
SHOW																																	
TOOELE	3	5	3	2	10	6	1	3	6	6	2	1	1	1	8	8	3	4	3	3													
TRINITY	2			2	3				3	3	3			2																			
UVCC									3	3		6	6		3	3																	
VERNAL		3			10	2	2	4	7	7		2	2		8	8	3	2	3	3	3												
WEBER ST.																																	
TOTAL	37	41	43	53	54	22	19	30	60	60	33	48	46	22	53	58	26	71	22	30	19												

TOTAL ENROL.
1220

CREDITS
103

Appendix B
Com-Net Centers

COM-NET CENTERS



Appendix C

Follow-up Letters to Professors

November 7, 1988

(Instructor)
Utah State University
Logan, Utah

Dear (Instructor),

Thank you again for agreeing to give permission to take fifteen minutes of your class time on day month date. This is just a reminder that I will be there before class to check in with the teaching assistants over the system to make sure everything is ready to go. When it is convenient during your class, you may then turn the time over to me and I will take care of administering the surveys. If you take a break during your class, it may be best to give me the last fifteen minutes before you begin your break. By so doing those individuals who get done early may start their break and those who need a few extra minutes may take them.

Thank you again. Your help is very much appreciated.

Sincerely yours,

Wynn Wilkes
doctoral candidate

Appendix D

Education Participation Scale and Scoring Key

EDUCATION PARTICIPATION SCALE

©Roger Boshier
1982
Reprinted, 1983
Reprinted, 1984

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Published by Learningpress Ltd., Box 46403, Station G, 3760 West 10th Ave, Vancouver, B.C.
B.C. V6R 2G0 Canada

TO WHAT EXTENT DID THESE REASONS INFLUENCE YOU TO ENROLL IN YOUR ADULT EDUCATION CLASS?

Think back to when you enrolled for your course and indicate the extent to which each of the reasons listed below influenced you to participate. Circle the category which best reflects the extent to which each reason influenced you to enroll. There are 40 reasons listed. Circle one category for each reason. Please be frank. There are no right or wrong answers.

1. To seek knowledge for its own sake	No influence	Little influence	Moderate influence	Much influence
2. To share a common interest with my spouse or friend	No influence	Little influence	Moderate influence	Much influence
3. To secure professional advancement	No influence	Little influence	Moderate influence	Much influence
4. To become more effective as a citizen	No influence	Little influence	Moderate influence	Much influence
5. To get relief from boredom	No influence	Little influence	Moderate influence	Much influence
6. To carry out the recommendation of some authority	No influence	Little influence	Moderate influence	Much influence
7. To satisfy an enquiring mind	No influence	Little influence	Moderate influence	Much influence
8. To overcome the frustration of day to day living	No influence	Little influence	Moderate influence	Much influence
9. To be accepted by others	No influence	Little influence	Moderate influence	Much influence
10. To give me higher status in my job	No influence	Little influence	Moderate influence	Much influence
11. To supplement a narrow previous education	No influence	Little influence	Moderate influence	Much influence
12. To stop myself becoming a "vegetable"	No influence	Little influence	Moderate influence	Much influence
13. To acquire knowledge to help with other educational courses	No influence	Little influence	Moderate influence	Much influence
14. To fulfill a need for personal associations and friendships	No influence	Little influence	Moderate influence	Much influence
15. To keep up with competition	No influence	Little influence	Moderate influence	Much influence
16. To escape the intellectual narrowness of my occupation	No influence	Little influence	Moderate influence	Much influence
17. To participate in group activity	No influence	Little influence	Moderate influence	Much influence
18. To increase my job competence	No influence	Little influence	Moderate influence	Much influence

19. To gain insight into my personal problems	No influence	Little influence	Moderate influence	Much influence
20. To help me earn a degree, diploma or certificate	No influence	Little influence	Moderate influence	Much influence
21. To escape television	No influence	Little influence	Moderate influence	Much influence
22. To prepare for community service	No influence	Little influence	Moderate influence	Much influence
23. To gain insight into human relations	No influence	Little influence	Moderate influence	Much influence
24. To have a few hours away from responsibilities	No influence	Little influence	Moderate influence	Much influence
25. To learn just for the joy of learning	No influence	Little influence	Moderate influence	Much influence
26. To become acquainted with congenial people	No influence	Little influence	Moderate influence	Much influence
27. To provide a contrast to the rest of my life	No influence	Little influence	Moderate influence	Much influence
28. To get a break in the routine of home or work	No influence	Little influence	Moderate influence	Much influence
29. To improve my ability to serve humankind	No influence	Little influence	Moderate influence	Much influence
30. To keep up with others	No influence	Little influence	Moderate influence	Much influence
31. To improve my social relationships	No influence	Little influence	Moderate influence	Much influence
32. To meet formal requirements	No influence	Little influence	Moderate influence	Much influence
33. To maintain or improve my social position	No influence	Little influence	Moderate influence	Much influence
34. To escape an unhappy relationship	No influence	Little influence	Moderate influence	Much influence
35. To provide a contrast to my previous education	No influence	Little influence	Moderate influence	Much influence
36. To comply with the suggestions of someone else	No influence	Little influence	Moderate influence	Much influence
37. To learn just for the sake of learning	No influence	Little influence	Moderate influence	Much influence
38. To make new friends	No influence	Little influence	Moderate influence	Much influence
39. To improve my ability to participate in community work	No influence	Little influence	Moderate influence	Much influence
40. To comply with instructions from someone else	No influence	Little influence	Moderate influence	Much influence

EDUCATION PARTICIPATION SCALE

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Scoring Key for General Form

I.D.

--	--	--	--

Score "No Influence" as 1, "Little Influence" as 2, "Moderate Influence" as 3 and "Much Influence" as 4. Write the raw score for each item in the right-hand margin of the questionnaire. Next, transfer each raw score onto this page. Sum the item responses and divide by the number of items in the factor to obtain an average score for each factor. These scores should range from 1 to 4.

I SOCIAL CONTACT

ITEM NO. RAW SCORE

2 =
9 =
14 =
17 =
19 =
26 =
31 =
33 =
38 =

Total =

=====

Average =

II SOCIAL STIMULATION

ITEM NO. RAW SCORE

5 =
8 =
12 =
16 =
21 =
24 =
27 =
28 =
35 =

Total =

=====

Average =

III PROFESSIONAL ADVANCEMENT

ITEM NO. RAW SCORE

3 =
10 =
11 =
13 =
15 =
18 =
20 =
32 =

Total =

=====

Average =

IV COMMUNITY SERVICE

ITEM NO. RAW SCORE

4 =
22 =
23 =
29 =
39 =

Total =

=====

Average =

V EXTERNAL EXPECTATIONS

ITEM NO. RAW SCORE

6 =
30 =
34 =
36 =
40 =

Total =

=====

Average =

VI COGNITIVE INTEREST

ITEM NO. RAW SCORE

1 =
7 =
25 =
37 =

Total =

=====

Average =

Appendix E

LEI, CUCEI, and Extension Questions

This questionnaire is to survey your reasons for enrolling in this class and to find out how you personally feel about your class. This is not a "test". There are no names or ID numbers to be written on this questionnaire. It is strictly anonymous. You are asked to give your honest, frank opinions about the class which you are attending now. It is hoped that by better understanding your educational experiences improvements can be made in future programs and offerings. There are three parts to this questionnaire consisting of four pages. Please answer every question on each of the four pages. Thank you very much for your help and cooperation.

DIRECTIONS-part one

In answering each question, go through the following steps:

- A. Read the statement carefully and think about how well the statement describes your class.
- B. Indicate your answer by circling:
 - SD if you *strongly disagree* with the statement,
 - D if you *disagree* with the statement,
 - A if you *agree* with the statement,
 - SA if you *strongly agree* with the statement.
- C. If you change your mind about an answer, cross out the old answer and circle the new choice.

- | | |
|--|---------------|
| 1. I look forward to coming to this class. | 1. SD D A SA |
| 2. There are opportunities for me to express my opinions in this class. | 2. SD D A SA |
| 3. The USU support personnel have been helpful and of assistance. | 3. SD D A SA |
| 4. The classroom is cluttered and overcrowded. | 4. SD D A SA |
| 5. This class is interesting. | 5. SD D A SA |
| 6. I put effort into what I do in this class. | 6. SD D A SA |
| 7. The physical facilities are suitable for our class. | 7. SD D A SA |
| 8. I feel that I am getting a good quality classroom experience. | 8. SD D A SA |
| 9. I pay attention to what others in the class are saying. | 9. SD D A SA |
| 10. I enjoy coming to this class. | 10. SD D A SA |
| 11. There is adequate access to materials needed for completing the required work for this class. | 11. SD D A SA |
| 12. The instructor dominates class discussions. | 12. SD D A SA |
| 13. The associated inconveniences of extension courses are more than made up for by the convenience of taking a class close to home. | 13. SD D A SA |
| 14. This class is a waste of time. | 14. SD D A SA |
| 15. The physical environment of the class leaves much to be desired. | 15. SD D A SA |
| 16. I "feel" a part of this class. | 16. SD D A SA |
| 17. Being involved with a class away from campus or scattered around the state poses no major difficulties. | 17. SD D A SA |
| 18. After the class, I have a sense of satisfaction. | 18. SD D A SA |
| 19. The facilities the class is held in are favorable to learning. | 19. SD D A SA |
| 20. This class is boring. | 20. SD D A SA |

The following questions from the LEI, CUCEI, and Extension scales are followed by which scale the question referred to.

<u>scale</u>	<u>instrument came from</u>
satisfaction	CUCEI
involvement	CUCEI
material environment	LEI
extension	created for this study

- | | |
|--|------------------|
| 1. I look forward to coming to this class. | 1. satisfaction |
| 2. There are opportunities for me to express my opinions in this class. | 2. involvement |
| 3. The USU support personnel have been helpful and of assistance. | 3. extension |
| 4. The classroom is cluttered and overcrowded. | 4. mat. inv. |
| 5. This class is interesting. | 5. satisfaction |
| 6. I put effort into what I do in this class. | 6. involvement |
| 7. The physical facilities are suitable for our class. | 7. mat. inv. |
| 8. I feel that I am getting a good quality classroom experience. | 8. extension |
| 9. I pay attention to what others in the class are saying. | 9. involvement |
| 10. I enjoy coming to this class. | 10. satisfaction |
| 11. There is adequate access to materials needed for completing the required work for this class. | 11. mat. inv. |
| 12. The instructor dominates class discussions. | 12. involvement |
| 13. The associated inconveniences of extension courses are more than made up for by the convenience of taking a class close to home. | 13. extension |
| 14. This class is a waste of time. | 14. satisfaction |
| 15. The physical environment of the class leaves much to be desired. | 15. mat. inv. |
| 16. I "feel" a part of this class. | 16. involvement |
| 17. Being involved with a class away from campus or scattered around the state poses no major difficulties. | 17. extension |
| 18. After the class, I have a sense of satisfaction. | 18. satisfaction |
| 19. The facilities the class is held in are favorable to learning. | 19. mat. inv. |
| 20. This class is boring. | 20. satisfaction |

Appendix F
Demographic Questions

DIRECTIONS-part three

Please respond to the statements or questions by filling in the blank, placing a check mark by the correct response, or circling the correct answer.

Course Number: _____ Site: _____

Do you study with other members of your class? no _____ If yes, how many? _____

Number of courses that you have taken during the last three years including current classes:

- a. Com-Net classes: _____
 b. face-to-face extension classes _____
 c. on campus classes _____

Academic Status:

- _____ 1. Freshman
 _____ 2. Sophomore
 _____ 3. Junior
 _____ 4. Senior
 _____ 5. Grad. (Masters)
 _____ 6. Grad. (Doctorate)
 _____ 7. other (please explain)

Sex: Female Male

Marital Status: Married Single

Age: _____

Occupation:

- _____ 1. teacher/educator
 _____ 2. military
 _____ 3. homemaker
 _____ 4. student
 _____ 5. office
 _____ 6. skilled
 _____ 7. other (please explain)

Current Income:

under \$10,000 _____
 10,001 - 14,999 _____
 15,000 - 24,999 _____
 25,000 - 34,999 _____
 35,000 - 44,999 _____
 45,000 - above _____

Years at current occupation: _____

Appendix G

Instructions for Comparison Group

DIRECTIONS

The following questionnaire is to survey the reasons why the students enrolled in your class and to find out how the students are feeling about their extension class experience. The instrument takes approximately fifteen minutes to administer. There are four pages to the instrument and it is critical that all four pages are completed. A good time to give this instrument is right before a break so that those individuals who get through early may begin their break and those who are a little slower may take the time they need. One problem that exists when the survey is given at the end of class is that often students are in such a hurry to leave that they do not give much thought or attention to it.

Directions for giving the survey in class.

After you have passed out the surveys so that everybody has one make sure that everyone has a pencil or pen (it does not matter which). Next begin by reading the following instructions. Read the italicized and underlined parts.

Will you please look at the beginning paragraph on page one and read along with me.

(Read the first paragraph on page one.)

Now will you please look at the directions for part one and read them with me.

(Read the directions for part one.)

Before you begin, please turn the page and on page two you will see the beginning of the Education Participation Scale. Please read the first sentence which is in all capital letters and the paragraph which follows it with me.

(Read the sentence which is in all capital letters and the paragraph which follows it.)

Now again before you begin turn to the last page and read the directions for part three with me.

(Read the directions for part three.)

Are there any questions? You may now begin.

When everyone is finished, please make sure that all of the surveys are gathered and placed in the provided envelope and given to the designated person. In case of missed connections please send the envelope to COM-NET, USU Telecommunications Network, UMC 5020, Utah State University, Logan, Utah, 84321-9981. Thank you very much for your help.

Appendix H

Interview and Observation Notes

Notes From Observations and Interviews

Interviews

Tooele: First person to come storming into the classroom, appears to be very frustrated. As she sits down she mumbles that this is the first and the last class that she will ever take here. When first asked about the class she expressed some frustrations about the Com-Net system. When asked to be more specific about what bothered her she started to talk about the fact that she was a very busy teacher, mother, and wife. She said that for a few years that she had thought about starting a masters program. Now that she had begun a program this quarter she just could not handle the added stress to an already very busy life. She indicated that maybe she had been out of the student role for too long and was not planning on pursuing her program. Maybe when her children were grown and gone she would think of it again.

Roosevelt: Male, fourth year LDS seminary teacher is currently pursuing a masters degree in education with USU extension. All the classes in his program are live. Their classes are alternated weekly between Vernal and Roosevelt. He is thoroughly enjoying his program and had nothing except very positive things to say about his classes and instructors. His main reason for wanting a masters was to get a pay raise and open doors in the future with his employer. He said he was thrilled to be able to get a masters throughout the school year and never have to leave home and ruin his summers. His favorite part of his program was the personal interaction with the professors that come out from Logan every week.

Had some very negative things to say about Com-Net. He said no one liked it, that it was poor quality, and that he would not do a program over the system. When asked about if he had ever taken a Com-Net class he answered no.

Roosevelt: Talked to another teacher who was in first year of teaching. He said that he wanted to start a masters program next year and was excited about being able to do it in Roosevelt and Vernal. He wanted to do a program in Education and was not sure about which particular program as of yet. Had no initial feelings about the Com-Net systems.

Roosevelt: A middle-aged man who was involved with the administrative endorsement program over the Com-Net system said that he was not thrilled about Com-Net, but that it sure was better than not being able to be in the program.

He also said that once this class was under way he really enjoyed the professor. He indicated that the professor put forth an effort to get to know everyone even over the system. According to his opinion, creative teachers come across fine, but dry and dull ones are dryer and duller than ever.

Logan: Part-time evening student involved in a Com-Net class who holds down a full time job. He said he wished that he could go full time and get done faster, but that was not even a possibility. Appreciated the evening program but did not like it when full time day students are in the classes. They are always doing more and better work than the part-time students. He felt that they had more time to devote to their studies and consequently got the better grades. Com-Net posed no problem for him at the Logan site.

Receptionist and secretary at Roosevelt: She said that she thought that if students had a choice that they would always take a face-to-face class over a Com-Net class. Complaints with Com-Net were far fewer since the last system upgrade. Some people she said would rather take Com-net than drive every other week over to Vernal. The major factor on what classes people took though were what program they were involved in, what classes they needed to take, and over which method they were offered.

Secretary evening school Logan: When people come in to sign up for a class they usually groan and moan some if it is a Com-Net class. Usually though they still take it but sometimes they say will wait and see if it is taught later with regular evening school. There seems to be an attitude that Com-net just really isn't as good.

Observations

Tooele site, Com-Net class: Room is noisy and very old. It is too cold and then it is too hot. the teaching assistant is so friendly she could be very annoying. Phone rang several times and she just talked on right there in the room. Students did not seem distracted.

One student there when class started, two others came in fifteen minutes late. They all sat in the back away from the mikes. One more student arrived 30 minutes late and then another 40 minutes late. Several people brought dinner and ate. One man was busily taking notes but the others were always going back and forth to the pop and candy machine and out the door for a smoke.

The instructor talked in a straight monotone voice lecturing. He never asked questions and the only ones who asked questions were at the Logan site. The instructor never repeated the questions so you did not know what they were. This was the first class this instructor had taught for the university. He was a local businessman that had been hired to teach this one class. The black and white picture was hardly ever changed. One picture was on for 14 minutes and the picture was only changed about every five minutes. During the class two people came in to check out audio tapes from the TA and they were very loud. Half way through the class there was a quiz. As soon as it was over the one individuals who came 40 minutes late left. All of these students had been together for two years in an undergraduate program. They seemed to get along very well and appeared to have an excellent system for helping each other.

Roosevelt site, Com-Net class: Two men and one woman, very friendly group, all were involved in the administrative endorsement program. The professor got class started and then turned some time over to a guest lecturer. Both men were excellent teachers. They used their voices well to maintain interest, and asked very good questions and waited for answers. If an answer did not readily come they would sometimes call someone by name and site. There were numerous comments from all of the sites.

The three individuals in the Roosevelt site were very involved the class. Before the class began they all commented on how they enjoyed the class and particularly the instructor. Though they had some problems with the sound for a little while they did not seem to be distracted by it. The observer noted that the V-Net picture was much better than the A-Net.

Logan site, Com-Net class: The instructor who was a graduate student began right away by asking questions. He paid really no attention to the Logan people. He seemed to be in his own little world with his mike. When no one volunteered answers he pulled out his role and started calling individuals by name and site. He forced people to comment and think. That seemed to really get things going. His style of teaching was mainly questions and the students seemed to respond well. The instructor had taught several courses over Com-net and appeared to really be at ease with the system.

Other observations: One afternoon while doing some checking up of classes in the evening school office at Logan, three men came in to sign up for a class. They came at different

times but all requested the same class which was being taught over Com-net. Two men complained rather loudly about Com-net. One left and said he would wait and see if the class was taught at a late date in a regular setting. The other individuals said he had to have the class and would take it because he had to. The third man just asked who was teaching the class. When he was told, he commented that he liked that teacher and though Com-Net did not excite him, the teacher did.

Appendix I
Letters of Transmittal

November 30, 1988

Dear (student's first name),

To better understand the experiences people are having through Utah State University's extension programs, a study is being conducted this fall (1988) quarter. The records show that you signed up for (class dropped) which you later dropped. The opinions of those in the class have been gathered, but your opinions and especially why you withdrew from the class is needed so that a complete view of all participants is obtained.

This is anonymous. A coding format is being used on the return envelopes, so follow up letters can be sent to those who do not answer the first time. Once the responses are received, the envelopes are destroyed so as to insure strict privacy.

Please realize that without hearing from those who withdrew an overall picture of the extension program is impossible to obtain. Your opinions will help in seeing that improvements to future programs are made.

Again we desperately need your response. You are part of a very small group and without your opinions the study will be incomplete. Please take 10 minutes and answer the following questionnaire. It can then be mailed in the enclosed self addressed stamped envelope. It is being mailed to my home in Idaho because that is where I am currently working. Your response is needed by December 20th so that the replies can be compiled.

Thank you very much for your help and cooperation. It is greatly appreciated.

Sincerely yours,

Wynn Wilkes
doctoral candidate
Utah State University

enclosures:
survey
return envelope

December 14, 1988

Dear (student's first name),

Hi again. Don't you just hate these things? I'm sorry to bother you again but your response is *desperately* needed for the completion of this study. The study is being conducted to try to better understand what motivates people to sign up for extension classes and to discover how they are feeling about their educational experiences. You are part of a very small sample who are listed as having dropped a class this fall quarter. You are listed as having dropped out of (the dropped class).

If this is a mistake and you never signed up for this class please just write this across the top of the survey and send it in the self addressed stamped envelope.

This is anonymous. A coding format is being used on the return envelopes, so follow up letters can be sent to those who do not answer the first time. Once the responses are received, the envelopes are destroyed so as to insure strict privacy.

Please realize that without hearing from those who withdrew an overall picture of the extension program is impossible to obtain. Your opinions will help in seeing that improvements to future programs are made.

Again your response is desperately needed. You are part of a very small group and without your opinions the study will be incomplete. Please take 10 minutes and answer the following questionnaire. It can then be mailed in the enclosed self addressed stamped envelope. It is being mailed to my home in Idaho because that is where I am currently working. Your response is needed by December 23th so that the replies can be compiled.

Thank you very much for your help and cooperation. It is greatly appreciated.

Sincerely yours,

Wynn Wilkes
doctoral candidate
Utah State University

enclosures:
survey
return envelope

Appendix J
Dropout Questions

This questionnaire is to survey your reasons for originally enrolling in an USU extension class and to find out why it was necessary for you to drop the class. You are asked to give your honest, frank opinions. There are no right or wrong answers, just your opinions. There are three parts to this questionnaire consisting of four pages. Please answer every question on each of the four pages. Thank you very much for your help and cooperation.

DIRECTIONS-part one

Please answer the following questions.

Why did you decide to withdraw from the class? _____

How did you feel about the class during the time you attended? _____

Would you ever sign up for another USU extension class? yes _____ If no, why not?

How do you feel that you have been treated by Utah State University extension services?

Any other comments you would like to make about your experiences with Utah State University?

DIRECTIONS-part two

On pages two and three there are forty statements that deal with reasons why some people take extension classes. Please go through and mark how much these reasons influenced you when you originally enrolled in the class which you later dropped.

DIRECTIONS-part three

Please respond to the statements or questions by filling in the blank, placing a check mark by the correct response, or circling the correct answer.

Number of courses that you have taken during the last three years including current classes:

- a. Com-Net classes: _____
 b. face-to-face extension classes _____
 c. on campus classes _____

Academic Status:

- _____ 1. Freshman
 _____ 2. Sophomore
 _____ 3. Junior
 _____ 4. Senior
 _____ 5. Grad. (Masters)
 _____ 6. Grad. (Doctorate)
 _____ 7. other (please explain)

Sex: Female Male

Marital Status: Married Single

Age: _____

Occupation:

- _____ 1. teacher/educator
 _____ 2. military
 _____ 3. homemaker
 _____ 4. student
 _____ 5. office
 _____ 6. skilled
 _____ 7. other (please explain)

Current Income: households

- under \$10,000 _____
 10,001 - 14,999 _____
 15,000 - 24,999 _____
 25,000 - 34,999 _____
 35,000 - 44,999 _____
 45,000 - above _____

Years at current occupation:

Appendix K

Responses From Dropout Questions

Responses from dropout questions.

1. Why did you decide to withdraw from the class?

"Because I didn't realize that I had already taken it several years ago."

"I did not actually drop the course; it was being offered (live) at another location at a point ten miles further away, on a different day. I already had another Com-Net class (which I dislike) so rather than take two, I merely changed sections. Had I stayed, I would have had 6 straight hours of Com-Net on one night. Too Much!"

"I missed the first night of class so when I saw the syllabus the 2nd night, I realized that I had already taken this class at Southern Utah State College."

"It required too much work for 3 hrs. credit and for my time schedule."

"I received word that I was not required to have the class. I was given credit for a similar course taken for my masters."

"I missed the first class because USU Extension gave me the wrong date of the starting class. I was ill and missed the second class. I felt I should drop and get a fresh start later."

"I did not like the school's approach that I could not or would not be allowed to pursue my second year or any further education in Elementary Education unless I passed one test on writing skills. I do not think that any one test should have that much weight or that tests per se are more important than the future hopes and desires of those that take them."

"I withdrew from the Tuesday night class and into the Thursday night class (Ed 608) because it was a more convenient night for me, so I don't think this survey applies to me."

"I wasn't aware that I was ever signed up for Econ 624. I did have Teaching Reading 400 Com-Net."

"I dropped all classes that I registered for this Fall Qtr. I became discouraged with the program when I learned that credits from a business college would not transfer when I was told that they would."

"Unable to pay tuition."

"Conflict with course."

"Because they rescheduled the class during one of my other classes so I dropped it."

"I'm a graduate student- didn't really need the class and the hour was inconvenient."

"I plan to finish my masters, but I have 5 yrs. to do it. The reason for getting a masters is more money & that was not a good enough reason to attend at this time."

"Work & home demands."

"Was going to school full time besides this class and just couldn't keep up."

"I missed the class a few times and didn't listen to the tapes. I just got behind; I don't want any bad grades."

"I am currently taking 3 extension classes from USU- did not sign up for BA 321 and later drop as previously stated."

"Decided this was not a class I needed, and there was a time conflict with another class I did need."

"I am a full time student at the UBAVC in the nursing program. It was going to be too much to take that class with the full time day courses."

2. How did you feel about the class during the time you attended?

"I didn't attend any of the classes. But I liked it when I took it several years ago."

"I had only negative feelings about both courses (Com-Net). Ed. 608 live turned out to be a positive experience. Same instructor(s), same content, same assignments, different tests - not quite fair in my judgement."

"It was a great class and very informative. It was great when she brought babies into class for observations."

"The instructor was very good. I just felt he wanted too much work for the credit given."

"I did not attend."

never attended

"I enjoyed all of my classes and was receiving A grades during the time I attended."

"I felt that the class was interesting. The instructor was exceptionally good."

"I didn't attend any classes."

"Drop before first day."

"I never attended it because they didn't know if they were going to hold it."

"Didn't attend."

"It was an excellent class & I will enjoy it when the time is right."

"Excellent & entertaining."

"Only attended one class - no opinion."

"I liked it."

"I have enjoyed the class I attended."

"I only attended once, so I can't really say."

"I enjoyed it."

3. Would you ever sign up for another USU Com-Net (extension) class?

"Yes, I'm taking 13 credits Winter Quarter."

"No, Spring 88, I had a course in Social Work Com-Net at HAFB. "Attendance was mandatory for an A," along with weekly faxed-in assignments. When comparing grades (as students will do) students who had 60% attendance had the same grade as 100% attendance students. Also, students at USU campus monopolized class time, discussion. Visual and audio portions were extremely poor."

"Yes. I plan to continue with USU extension classes winter, spring, summer, fall 1989 - winter & spring 1990 and then graduate."

"Yes."

"Not is there is any other way. By the time you see the picture the instructor is far ahead."

"Yes."

"Possibly. If I felt I needed instruction in some specific area."

"Yes."

"Yes."

"Yes."

"Yes."

"Yes."

"Yes."

"Yes."

"Yes."

"Yes."

"Yes."

"Yes."

4. How do you feel that you have been treated by Utah State University extension services?

"Very Good."

"Poorly; I feel Com-Net classes are a "cop-out", a way to take our money in exchange for a few hours credit with no personal effort on their part. Students deserve better."

"Great. I appreciate having Utah State University in the Vernal, Roosevelt area."

"Very good...Vince is very good to work with."

"Very Good."

"Fine."

"They were very helpful and persuasive and helpful in the beginning, when I enrolled. They convinced me to stay when I wanted to quit the third week. On the 4th week, when they had their money, it took 10 seconds to drop out."

"Average by the extension. Not too good by the admissions office."

"They were very helpful with my tuition difficulty. The University's collection agency hassled me a great deal and the University was very slow to help. Extension helped."

"OK, it could be worse."

"Very good."

"My FHD Grad. program was dropped when I was 1/3 of the way through it; I don't feel very good about that."

"fine."

"Fine."

"Just fine!"

"I can't complain one bit. Louis Griffin is a very good man to work with."

"Treated fairly."

"Very good. Absolutely no complaints."

"Very well."

5. Any other comments you would like to make about your experiences with Utah State University?

"I'm really glad that they have extension classes otherwise I wouldn't be able to go to college."

"When a course is offered, ie Ed 750, one quarter from professor "A" and the next quarter the same course of offered, but taught by professor "B" - shouldn't the content at least be somewhat similar?"

"They do the best they can to give a new schedule the week of finals so that you can plan for your next quarter. We

have wonderful councilors in our area. They offer as many classes as possible, but I would like to see more history classes."

"I went full time on campus this summer. It was one of the best educational experiences of my life."

no comment

"Overall, I'm thankful for the opportunity to take classes."

"I proved to myself that my brains are not "rusty" or "dusty" and that I can do algebra. I was very discouraged at the treatment teachers in Utah schools are receiving and I do not have the temperament for school teacher "politics."

"I hope the University will accept and back up the extension services advice. If not I'll drop out totally."

"Yes, have the bulletin printed up right the first time, this is the reason that the class was dropped."

"The classes I have taken for the most part have been very well."

"I appreciate the opportunity to receive a degree in Business without having to move on campus."

Extra Notes Written

"I never enrolled for the class you mentioned and I've never dropped any of the classes I've enrolled in. I am majoring in computers!"

"Never signed up for BA 321. If did the class cancelled. Reason for withdrawal."

"This must be a mistake. I took El Ed 680 winter 1986 and received credit. I have not dropped a class."

comment on part three, the person underlined the word please and then wrote, "That is a nice word. I wonder why I heard it used so seldom after I enrolled."

"There was a mix-up. I did sign up for the class and I completed it, and... I loved it! I hope that the Universities records are straight."

Appendix L

Analysis of Variance Tables

Analysis of Variance on Satisfaction Scores by Method

Source	DF	SS	MS	F	p
Method	1	51.89	51.89	6.02	.015
Error	239	2059.89	8.62		
Total	240	2111.78			

Analysis of Variance on Perceived Involvement by Method

Source	DF	SS	MS	F	p
Method	1	117.41	117.41	29.31	.000
Error	239	1263.98	5.29		
Total	240	1309.79			

Analysis of Variance on Extension Scores by Method

Source	DF	SS	MS	F	p
Method	1	45.81	45.81	8.66	.004
Error	239	1263.98	5.29		
Total	240	1309.79			

Analysis of Variance on Material Environment Scores by Method

Source	DF	SS	MS	F	p
Method	1	3.88	3.88	0.67	.415
Error	239	1388.25	5.81		
Total	240	1392.13			

Analysis of Variance on Satisfaction Scores by Course for EDE Group

Source	DF	SS	MS	F	p
Course	3	243.01	81.00	11.57	.000
Error	152	1063.98	7.00		
Total	155	1306.99			

Analysis of Variance on Involvement Scores by Course for EDE Group

Source	DF	SS	MS	F	p
Course	3	94.85	31.62	7.97	.000
Error	152	602.81	3.97		
Total	155	697.67			

Analysis of Variance on Material Environment Scores by Course for EDE Group

Source	DF	SS	MS	F	p
Course	3	21.36	7.12	1.21	.308
Error	152	893.78	5.88		
Total	155	915.15			

Analysis of Variance on Extension Scores by Course for EDE Group

Source	DF	SS	MS	F	p
Course	3	66.23	22.08	4.34	.006
Error	152	773.94	5.09		
Total	155	840.17			

Analysis of Variance on Satisfaction Scores by Site for EDE Group

Source	DF	SS	MS	F	p
Site	12	151.81	12.65	1.57	.108
Error	143	1155.18	8.08		
Total	155	1306.99			

Analysis of Variance on Material Environment Scores by Site for EDE Group

Source	DF	SS	MS	F	p
Site	12	187.70	15.64	3.07	.001
Error	143	727.44	5.09		
Total	155	915.15			

Analysis of Variance on Extension Scores by Site for EDE Group

Source	DF	SS	MS	F	p
Site	12	264.84	22.07	5.49	.000
Error	143	575.33	4.02		
Total	155	840.17			

Analysis of Variance on Involvement Scores by Site for EDE Group

Source	DF	SS	MS	F	p
Site	12	100.31	8.36	2.00	.028
Error	143	597.36	4.18		
Total	155	697.67			

Analysis of Variance on Satisfaction Scores by Course for Comparison Group

Source	DF	SS	MS	F	p
Site	7	295.91	42.27	7.12	.000
Error	77	456.99	5.93		
Total	84	752.89			

Analysis of Variance on Material Environment Scores by Course for Comparison Group

Source	DF	SS	MS	F	p
Site	7	81.24	11.61	2.28	.036
Error	77	391.87	5.09		
Total	84	473.11			

Analysis of Variance on Involvement Scores by Course for Comparison Group

Source	DF	SS	MS	F	p
Site	7	24.05	3.44	1.12	.358
Error	77	235.60	3.06		
Total	84	259.65			

Analysis of Variance on Extension Scores by Course for Comparison Group

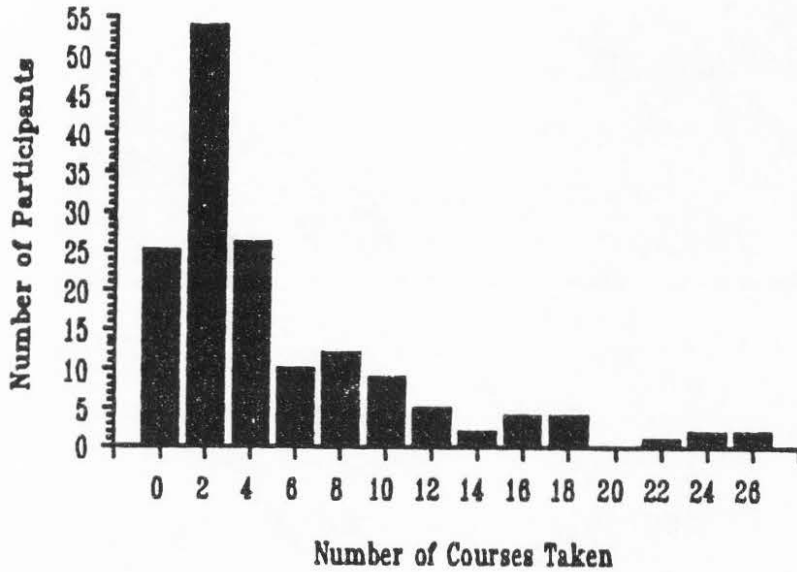
Source	DF	SS	MS	F	p
Site	7	25.89	3.70	0.72	.659
Error	77	397.92	5.17		
Total	84	423.81			

Appendix M

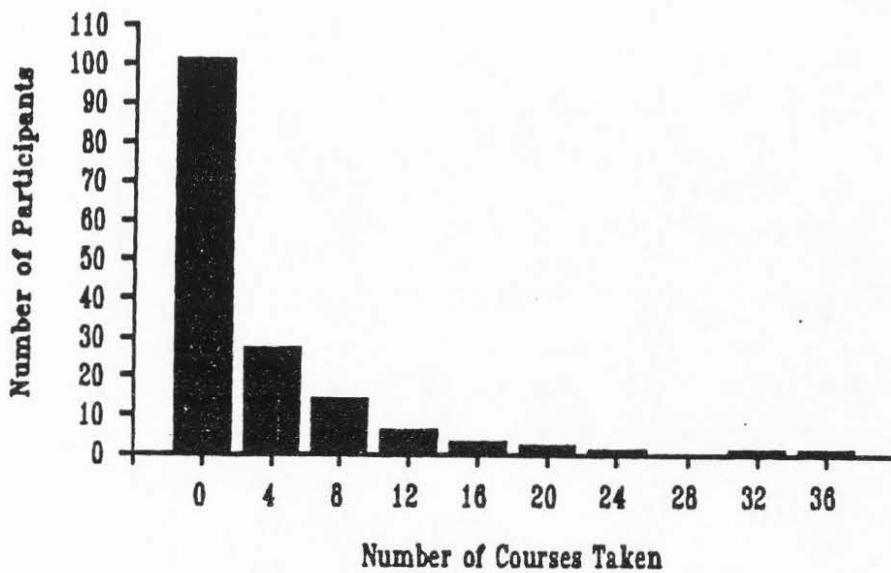
Average Number of Courses Taken by Participants

During Last Three Years

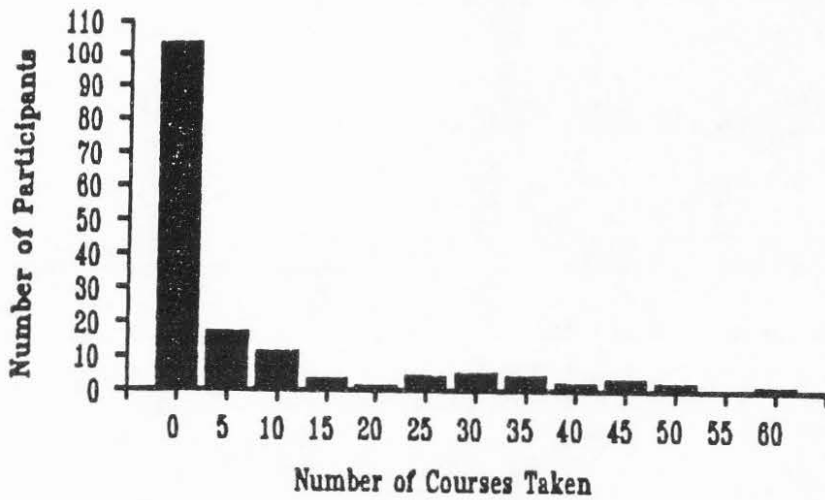
Number of COM-NET Courses Taken by EDE Participants During the Last Three Years



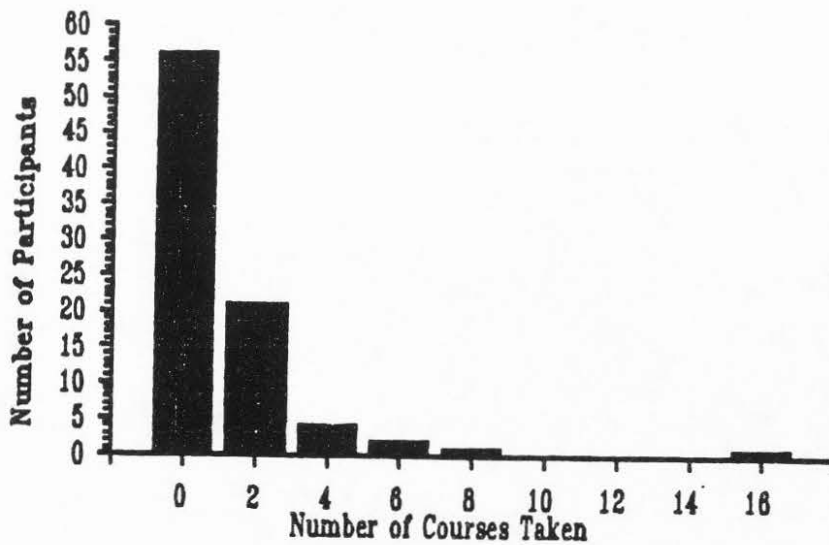
Number of Face-To-Face Classes Taken by EDE Participants During the Last Three Years



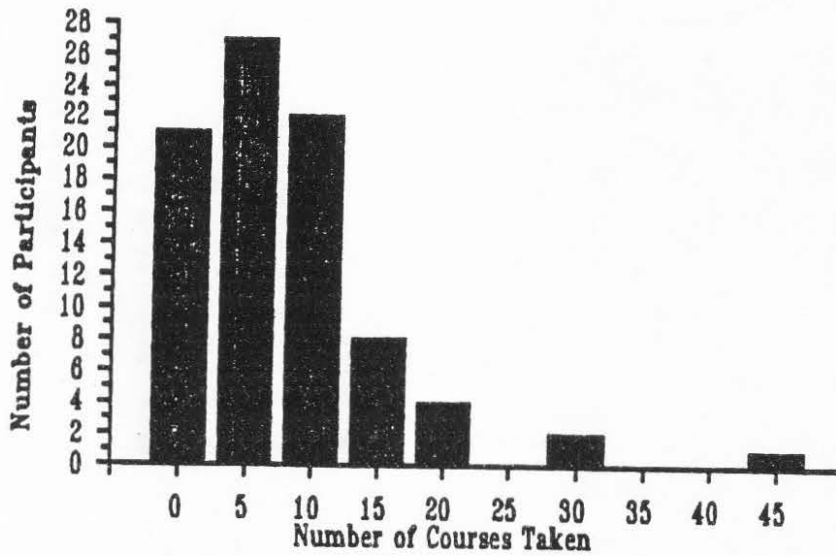
Number of On-Campus Classes Taken by EDE Participants During the Last Three Years



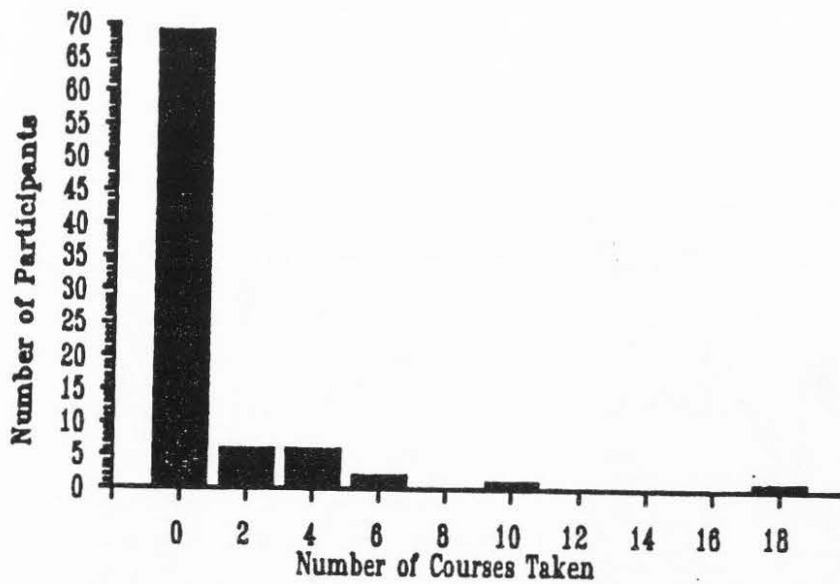
Number of COM-NET Courses Taken by Face-To-Face Participants During Last Three Years



Number of Face-To-Face Courses Taken by
Face-To-Face Participants During the
Last Three Years



Number of On-Campus Classes Taken by
Face-To-Face Participants During
The Last Three Years



VITA

Charles Wynn Wilkes

General Information

Address: 484 North 3950 East
Rigby, ID 84321

Date of Birth: February 24, 1953

Married: Teresa Manwaring
August 7, 1975

Children: Wynn (12), Justin (11), Chersten (10),
Caleb (8), Brendlyn (6), Jacob (3),
Marcus (1), and Mikala (6 months)

Education

Utah State University, Logan, Utah
Ed.D. 1989 Instructional Technology

Brigham Young University, Provo, Utah
M.Ed. 1982 Educational Psychology,
Guidance and Counseling
Minor: Ancient Scripture

Brigham Young University, Provo, Utah
B.A. Cum Laude 1977, Economics

Professional Experience

1974-1975 Swedish Instructor Language Training
Mission, Ricks College, Rexburg, Idaho.

1976-1977 Swedish Instructor and Supervisor Language
Training Mission, Brigham Young University, Provo,
Utah.

1977- Seminary Instructor for L.D.S. Church. Duties
have included classroom teacher, principal, and
teacher support consultant.

Background

Eagle Scout, 1968.

Idaho All State Basketball, 1971.

1972-1974 Mission for Church of Jesus Christ of
Latter-day Saints, Stockholm Sweden Mission.

AYSO Soccer Coach, five of last seven years. Little
league basketball coach.

Assistant Scout and Varsity Scout Leader, eight years.