A Sample Mixed Methods Dissertation Proposal

Prepared by

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NOTE: This proposal is included in the ancillary materials of *Research Design* with permission of the author.

If you would like to learn more about this research project, you can examine the following publications that have resulted from this work:

Ivankova, N., & Stick, S. (2007, Feb). Students' persistence in a Distributed Doctoral Program in Educational Leadership in Higher Education: A mixed methods study. *Research in Higher Education, 48*(1), 93-135. DOI: 10.1007/s11162-006-9025-4

Ivankova, N. V., Creswell, J. W., & Stick, S. (2006, February). Using mixed methods sequential explanatory design: From theory to practice. *Field Methods, 18*(1), 3-20.

Ivankova, N., & Stick, S. (2005, Fall). Preliminary model of doctoral students' persistence in the computer-mediated asynchronous learning environment. *Journal of Research in Education, 15*(1), 123-144.

Ivankova, N., & Stick, S. (2003). Distance education doctoral students: Delineating persistence variables through a comprehensive literature review. *The Journal of College Orientation and Transition, 10*(2), 5-21.

STUDENTS' PERSISTENCE IN THE UNIVERSITY OF NEBRASKA - LINCOLN

DISTRIBUTED DOCTORAL PROGRAM IN EDUCATIONAL ADMINISTRATION:

A MIXED METHODS STUDY

by

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PROPOSAL FOR DISSERTATION STUDY

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Interdepartmental Area of Administration, Curriculum, and Instruction

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Chapter 1

INTRODUCTION

Statement of the Problem

Graduate education is a major part of American higher education, with more than

one and a half million students enrolled in graduate programs (Baird, 1993).

Approximately one fifth are graduate students pursuing doctoral degrees (Geiger, 1997).

Out of this number, from forty to sixty percent of students who begin their doctoral

studies do not persist to graduation (Bowen & Rudenstine, 1992; Nolan, 1999; Tinto,

1993). High failure rate and the ever increasing time to degree is reported as a chronic

problem in doctoral education (Lovitts & Nelson, 2000) and results in a loss of high-level

resources (Tinto, 1993). In educational majors, attrition from doctoral programs is

estimated at approximately fifty percent. Furthermore, of this fifty percent, about twenty

percent give up at the dissertation stage (Bowen & Rudenstine, 1992; Cesari, 1990).

Failure at this point is not only painful and expensive for a student, but also discouraging

for faculty involved, and injurious to an institution's reputation (Bowen & Rudenstine,

1992; Johnson, Green, & Kluever, 2000; Tinto, 1993).

The high dropout rate among doctoral students seems incongruous given the

importance of doctoral study to research, education, policy, leadership and professional

practice. In addition, doctoral students are considered to be among the "most

academically capable, most academically successful, most stringently evaluated, and

most carefully selected in the entire higher education system" (Golde, 2000, p. 199). Why

doctoral student fail to meet their academic goals and leave programs prior to degree

completion has long been a focus of researchers' attention. A concomitant interest is

doctoral student persistence, i. e., the ability and desire of doctoral students to persist in their academic programs throughout the successful completion of their degrees. Many studies have been done to understand aspects of attrition or reasons for persistence of doctoral students (Bair & Haworth, 1999; Golde, 2001; Haworth, 1996; Kowalik, 1989). There is much less research on doctoral student attrition and persistence in Distance Education (DE), particularly computer-mediated asynchronous learning (CMAL) environments (Tinto, 1998).

Although learning via distance, with the help of interactive technology is a fairly new phenomenon in education, DE has become a pronounced and viable alternative to the traditional higher education face-to-face classroom mode in selected areas of graduate education. In many ways, DE using CMAL is different from a conventional educational setting. It provides participants great flexibilities for learning opportunities because of being location and time free. Instead of conventional constraints imposed by schedules for classes, DE, especially via asynchronous means, allows for and facilitates maximum involvement by all participants. It obviates the artificial barriers to learning created by restricted class time and specific location. Further, it tends to cultivate a distinctly different student population, course design, and instructional technique (Moore & Kearsley, 1996; Simonson, Smaldino, Albright, & Zvacek, 2000).

The DE student population is composed of mainly part-time adult students. Generally they have numerous and demanding commitments to work, family, and social lives, and seek 'career-friendly' courses, locally or at a distance, using distance learning methods (Finke, 2000; Holmberg, 1995; Thompson, 1998). These students tend to be more vulnerable to factors encroaching on their academic progress because their school-

related activities often are not primary life objectives. Their other commitments assume greater degrees of obligation and necessity, at least during incipient stages of DE.

Persistence in DE is a complex phenomenon influenced by a multitude of variables (Kember, 1990). Academic success in a distance learning environment using CMAL depends on many factors: challenges set by the distance learning environment, personally related internal and external variables, financial burdens, computer literacy, ability to access requisite technology, time management, and absent or questionable support from an employer and/or family. Researchers claim a higher dropout rate among DE students than commonly found among conventional higher education students (Carr, 2000; Diaz, 2000; Parker, 1999; Verduin & Clark, 1991). Their lack of persistence often is attributed to a failure of becoming socially and academically integrated, as well as other factors internal and external to an academic institution (Kember, 1995).

Given the claimed high dropout rate of students from DE and the fact increasing numbers of postsecondary institutions offer advanced-degree distributed programs, it is important to know why some students are successful in pursuing doctoral degrees in CMAL environment and why others fail. Knowledge and understanding of the factors contributing to and/or impeding students' persistence may help academic institutions better meet DE students' needs and increase their retention and degree completion rate. This is especially important today when postsecondary institutions have to confront the growing problems of revenue generation and increasing budget cuts. Knowledge of the evolving tendencies may also serve as a baseline for higher educational administrators in elaborating extended education policies, designing and developing DE programs, and improving distant student support infrastructure.

This dissertation will add to research on persistence and attrition of distance learners by identifying factors contributing to and/or impeding students' persistence in the Asynchronous Educational Administration Distributed Doctoral Program in Educational Leadership in Higher Education (ELHE-DE) offered by the University Nebraska – Lincoln (UNL), using a mixed methods design. The rationale for combining both quantitative and qualitative approaches is that the quantitative data and results provide a general picture of the research problem, i. e., what internal and external factors contribute to and/or impede students' persistence in the ELHE-DE program, while the qualitative data and its analysis will refine and explain these statistical results by exploring the participants' views in more depth (Creswell, 2002; Tashakkori & Teddlie, 1998).

Purpose of the Study

The purpose of this sequential explanatory mixed methods study will be to study doctoral students' persistence by obtaining statistical, quantitative results from surveying a sample of the distributed learning ELHE students and then following-up with four purposefully selected individuals to explore these results in more depth by semi-structured interviews and other elicitation materials. In the first, quantitative phase of the study, the quantitative research questions will address how selected internal and external variables to the ELHE-DE program served as predictors to students' persistence and/or non-persistence in the program. In the second, qualitative phase, four case studies, selected on typical response and maximal variation principle, one from each of the four groups of participants (withdrawn and inactive, active in the first half of the program,

active in the second half of the program, and graduated) explored in-depth the results from the statistical tests.

<u>Research Questions</u>

For the first, quantitative phase of this study the guiding research question is:

- What factors (internal and external) predict students' persistence in the ELHE-DE program?

The specific research sub-questions for Phase I are:

1. How do ELHE-DE program-related factors impact students' persistence in the program?

2. How do academic advisor- and faculty-related factors impact ELHE-DE students' persistence in the program?

3. How do institutional-related (UNL) factors impact ELHE-DE students' persistence in the program?

4. How do student-related factors impact their persistence in the ELHE-DE program?

5. How do external factors impact ELHE-DE students' persistence in the program?

For the second, qualitative phase of this study the overarching research questions are:

- How do the selected factors (internal and external) identified in Phase I, contribute to and/or impede students' persistence in the ELHE-DE program?

- How can the statistical results obtained in the quantitative phase be explained?

The research sub-questions for Phase II will be formulated based on the results of the first, quantitative phase of the study.

<u>Definitions and Terms</u>

Academic advisor is the person assigned to serve as primary mentor to a student.

Academic program of studies is the designed sequence of formal and informal coursework, including research activities, internships, and directed study, prepared for each doctoral student and approved by the respecting Doctoral Supervisory Committee and Graduate School Dean.

Administration, Curriculum and Instruction is one of the doctoral programs offered through UNL Teachers College.

Admitted and active students are those who are admitted into the ELHE-DE program and have been enrolled in at least one credit hour of academic coursework and/or dissertation hours during the last three terms (spring, fall, summer). Admitted but not active students are designated as *inactive.*

Asynchronous is a type of communication occurring with a time delay between steps in the dialog, allowing participants to respond at their own convenience. Literally "not synchronous"; in other words, not at the same time. Asynchronous capabilities give learners access to course materials, including readings, embedded and streamed multimedia, and external Web sites. They also allow learners to participate in facilitated discussions, and complete assignments individually and collaboratively (Web Based Learning Resources Library, 2002).

Attrition refers to a student who has been enrolled in a program of studies and fails to continue or make satisfactory progress (Isaac, 1993).

Blackboard is a Web-based server software platform enabling colleges and universities to put their academic, administrative, community and other educational

services online. It offers a course management system, an open architecture for customization and interoperability, and a scalable design. It features: (1) modular architecture for superior scalability and performance, enabling single-site implementations to support tens of thousands of users and thousands of courses; (2) an open architecture to support third-party learning applications, interfaces, and system services to seamlessly interact with the Blackboard platform (Blackboard Inc., 2002).

Comprehensive examination is a broad examination covering material in several courses, typically taken at the end of doctoral course work before writing the dissertation (Glossary of United States Educational Terminology, 2002).

Dissertation is a formal writing requirement -- often an original contribution to knowledge and research -- for a doctoral degree (Glossary of United States Educational Terminology, 2002).

Dissertation proposal is a blueprint of the proposed dissertation study, which provides the background information for the study topic, states the study aim and research questions, and discusses the methodological procedures.

Distance education is a formal instruction in which a majority of the teaching function occurs while an educator and learner are at a distance from one another (Verduin & Clark, 1991).

Distributed learning is a general term used to describe a multi-media method of instructional delivery including a mix of Web-based instruction, streaming video conferencing, face-to-face classroom time, distance learning through television or video, or other combinations of electronic and traditional educational models. Distributed

learning can be executed in a variety of ways, but is consistent in always accommodating a separation of geographical locations for part (or all) of the instruction, and focuses on learner-to-learner as well as instructor-to-learner interaction (Whatis?com, 2001).

Doctoral degree is the highest academic credential a student can earn for graduate study. The doctoral degree classification has numerous distinctions, such as Doctor of Education, Doctor of Juridical Science, Doctor of Public Health, Doctor of Philosophy degree, etc. For this study, the consideration is on just the Doctor of Philosophy and Doctor of Education degrees in Educational Leadership and Higher Education (ELHE) (Common Data Set of U.S. Higher Education Terminology, 2002).

Doctoral Supervisory Committee is comprised of at least four Graduate Faculty Fellows, at least one being from outside the major department.

Drop-out or *withdrawn* is a person who enrolled in a program of academic studies and does not eventually complete it (Kember, 1995).

ELHE-DE is asynchronous Educational Administration Distributed Doctoral Program in Educational Leadership in Higher Education offered by the University Nebraska – Lincoln. The primary platforms used are Lotus Notes and Blackboard.

Lotus Notes is a distance learning platform integrating live, asynchronous and self-paced content delivery. It provides integrated collaborative environment that facilitates organized communication among students and professors in distance and distributed classes (IBM Lotus Notes, 2002).

Matriculated refers to a student enrolled in a program leading to a degree (Glossary of United States Educational Terminology, 2002).

Oral defense is the process during which a doctoral candidate defends the premise of the dissertation, methods for analyzing data collected, interpretations and conclusions. The process is done before at least the members of the Doctoral Supervisory Committee, who then vote on the adequacy of the candidate's work. A positive vote leads to recommending the candidate be awarded the doctoral degree sought.

Persistence for the ELHE-DE students is defined as successful completion of six credit hours of course work within two years or being enrolled for dissertation hours and making demonstrable progress toward completion of the dissertation.

Program of studies for either the Ph.D. or Ed.D. in EHLE includes seven components: 1) doctoral seminars, 2) coursework in the area of emphasis, 3) common studies, 4) multicultural/global perspectives, 5) teaching or internship requirement, 6) research requirements, and 7) service requirement. An academic program of studies addressing these areas varies according to an individual student's needs, expectations, and goals. Appointment of the Doctoral Supervisory Committee and approval of a student's program of studies by the Dean of Graduate Studies establishes the program of studies for a doctoral student. Students must complete no less than 45 semester hours of coursework, including the dissertation, after approval of the program of study. For the Ph.D., a minimum of 90 semester graduate hours must be completed, excluding research tools, and up to one-half may be transferred in as acceptable graduate credit if the Supervisory Committee approves. For the Ed.D., a minimum of 96 of approved semester graduate hours is required, and up to one-half mat be accepted as transfer credit if approved by the Doctoral Supervisory Committee. Research tools are included in the

academic program, a marked distinction from the Ph.D. (Graduate Studies Bulletin 2000-2002).

Residency is a period of time when a doctoral student is in locus. Conventionally it refers to a doctoral student completing a prescribed number of graduate hours within a defined period of time. The intent is to ensure continued progress toward completion of a Program of Studies. The University of Nebraska - Lincoln requirements for meeting residency requirements are completion of 27 hours of graduate course work within a period of 18 months, or if employed in higher education the requirement is 24 hours of course work within a period of 24 months. At no time is there a stipulation for a student being physically present on campus, so the term locus refers to satisfying a condition during a passage of time.

Retention is the process by which a student enters a program of study and remains until graduated (Gunn & Sanford, 1988).

Virtual - "not physically existing as such but made by software to appear to do so from the point of view of the program or the user" (Jewell & Abate, 2001).

UNL Educational Administration Distributed Doctoral Program

The Educational Leadership in Higher Education Distributed Doctoral Program is offered through the Department of Educational Administration at the University of Nebraska Lincoln (Seagren & Stick, 1999; Seagren & Watwood, 1996, 1997; Stick & Ivankova, 2003). The program offers students a choice of the Ph.D. or the Ed.D. degrees. It is possible for students to complete an entire doctoral degree, meeting residency requirements, via the distributed mode.

The program was initiated in 1994 as a response to bolster declining student enrollment. At the time, there were 21 doctoral students in various stages of their programs. Introduction of the Distributed Doctoral Program in Educational Leadership in Higher Education immediately enlarged the pool from which students could be selected, because it projected the program onto a world-wide stage. Previously it had been constrained to a finite, if not consistently decreasing stage, circumscribed by state boundaries with a small population. In 1997, the first students who completed at least half of their programs online were graduated with the doctoral degrees in Administration, Curriculum, and Instruction with the emphasis in Educational Leadership in Higher Education (Stick & Ivankova, 2003).

In the summer of 2002, there were 370 students in varying stages of their programs, and between 180-200 were active during any given semester. Those participants took some of their coursework on campus because a program of studies to best accommodate their needs was not available online, or they wanted the on-campus experience. August 2002 saw the first doctoral graduate to complete all required work without any time in physical residence. December 2002 saw two more such graduates, and it was expected the numbers would increase sharply during 2003. (S. L. Stick, personal communication, December 16, 2002,).

Innovative teaching methodologies and a distributed learning environment enabled most program participants to complete their Program of Study within a 36 to 60-month period, with minimal disruption to lifestyle, family responsibilities, and employment. Most of the coursework necessary for the degree is provided through distributed learning software using multiple computer systems and platforms, which

utilize the Internet as a connecting link. A majority of the program is delivered to the students via the UNL adaptation of the Lotus Notes groupware, which provides asynchronous and collaborative learning experiences to participants (Stick & Ivankova, 2003).

Complying with the university residency requirement of completing 27 hours in 18 months (or 24 hours in 24 months if employed in the major field), participants are encouraged to have some on-campus attendance. Students usually attend one or more campus summer school sessions; configurations for 3, 5, 8, 10, or 13 weeks are made to accommodate participants regarding the on-campus experience, and to balance program requirements with participants' personal, professional, and academic needs. The on-campus experience enables students to take courses not currently offered online, work intensively with their academic advisor, meet and work with other students in the ELHE program, and to concentrate on their studies for a period of time with minimal daily disruptions (On-Line Graduate Degrees in Higher Education, 2002).

In an effort to create a supportive and integrated learning environment, students in the distributed program have access to a virtual student organization, a virtual student union, UNL library online access, student advising, and technical support (Center for the Study of Higher and Postsecondary Education, 2001). These services are comparable, and probably better, than those provided to on-campus students, and help distant students get socially and academically integrated into the UNL learning community.

Theoretical Perspective

Three major theories of student persistence -- Tinto's (1975, 1987, 1993) Student Integration Theory, Bean's (1980, 1985, 1990) Student Attrition Model, and Kember's

(1989a, 1990, 1995) model of dropout from distance education courses -- served as a theoretical foundation for this study.

Tinto's model. Tinto's Student Integration Theory (1975) conceptualized persistence as an outcome of students' interactions with their colleges and universities as organizations. In this model, Tinto described the relationship between student background characteristics and educational expectations and the characteristics of academic institutions. Students' background characteristics were seen as important predictors of persistence because they helped determine how a student interacted with an institution's social and academic systems, and subsequently become integrated into it. Tinto's conceptual model represented five variable sets in a causal sequence: (1) background characteristics; (2) initial goal and institutional commitments; (3) academic and social integration; (4) subsequent goal and institutional commitments; and (5) withdrawal decisions.

Tinto (1987, 1993) identified attrition as lack of congruency between students and academic institutions. Academic performance and social involvement reflected the degree to which students were integrated into an institution, and determined the degree to which students established committed goals to be graduated. Dropout was viewed as a result from a multidimensional process involving interactions between an individual and an institution. Tinto's model suggested the characteristics of an institution, like its resources, facilities, structural arrangements, and composition of its members, imposed limits on the development and integration of individuals within an institution and thus led to development of academic and social climates, which an individual must contend.

Tinto's theory, however, did not address external factors, such as the influence of family, friends and employers, and their role in shaping perceptions, commitments, and preferences, and sustaining students' persistence (Bean & Metzner, 1985). Bean presented the Student Attrition Model (1980, 1985, 1990) to further expand on undergraduate students' retention, taking into account the impact of external forces on students' persistence.

Bean's model. Bean's model (1980) proposed students' intentions to stay at their academic institutions were shaped by their beliefs and attitudes, which resulted from academic and social experiences with an institution. Positive college experiences led to favorable beliefs and attitudes toward an institution, which fostered an intention to persist. Factors external to an institution affected both attitudes and decisions of students and were active while a student was attending a college. A better match between student and institutional characteristics was presumed to lead to higher persistence rates (Cabrera, Castaneda, Nora, & Hengstler, 1992).

These two theoretical models, Student Integration Theory (Tinto, 1975) and Student Attrition Model (Bean, 1980) provided a comprehensive framework on college departure decisions (Cabrera, Nora, & Castaneda, 1993). Both models regarded persistence as the result of a complex set of interactions over a period of time, and both argued persistence was affected by a successful match between student and institution (Hossler, 1984). However, both Tinto's Student Integration Theory (1975) and Bean's Student Attrition Model (1985) focused on undergraduate residential, mostly freshmen, students. They assumed such students would be attending college as a primary responsibility and had no other primary commitments (Martin, 1990). In addition, the two

theories did not distinguish between traditional (18-22 years olds) and nontraditional (older and working) student departure (Ashar & Skenes, 1993), and did not discuss the applicability of the model to graduate students, or in nontraditional educational settings, like distance education.

Kember's model. Kember reformulated (1989a, 1990, 1995) Tinto's (1975, 1987, 1993) model for adult students in a distance education learning environment. Kember (1994) argued if influences external to a campus have significant impact on traditional students' persistence, they must be important to DE students who also had more demanding commitments to work, family, and social lives. Kember's model of dropout from distance education courses included the entry characteristics, goal commitment, academic, and social integration components of Tinto's (1990) model.

The characteristics of Kember's (1995) model included background variables related to a student, family and home situation, the work environment, and educational history of the student. The variables were chosen because they influenced the succeeding components of the model instead of any direct statistical relationship to dropout (Kember, 1989a). The goal commitment component considered intrinsic and extrinsic motivation.

Kember (1990) defined academic integration and social integration as embracing all facets of the offering of a distance education course by a higher education institution, including both academic and administrative support systems, the package of study materials, and all forms of contact between faculty and students. To determine whether a student was successfully integrated academically required examining each of facets of the academic environment. Social integration was measured by the degree a distance student was able to integrate part-time study with family, work, and social demands. Because DE

students normally were employed full-time and most had family commitments, the extent to which such integration was successful was crucial to their chances for completing a course (Kember, 1989a). The model also presented a cost/benefits analysis for a student considering whether to drop out or continue studying. A recycling loop reflected changes and developments as students proceeded through a course and took account of changes to variables during this period.

Principles versus predicting. This dissertation study will use the principle components of the three models (Bean, 1980; Kember, 1994; Tinto, 1975) to test the predicting power of selected internal and external factors to doctoral students' persistence in CMAL environment. None of the models were used as a foundation for testing such relationships for distributed doctoral students. It bears recognizing, the goal of the current study is not to test any of the theories or develop a model of doctoral student persistence in the distributed learning environment. This will be left for future research.

Delimitations

Delimitations of the study include:

1. The study will be confined only to the University of Nebraska – Lincoln and one graduate program. The uniqueness of the study within a specific context makes it difficult to replicate exactly in another context (Creswell, 2003).

2. Participants' responses will be reflections of, and confined to their personal experiences in the UNL Educational Administration Distributed Doctoral Program, involving the self-assessment component.

3. The study will provide only one perspective on persistence in the distributed doctoral program - that of the students themselves, excluding other constituents internal and external to the program.

4. Due to the time factor and lack of comprehensive database, the researcher may not locate all the students who withdrew from the ELHE-DE program. This may skew the results of the statistical analysis in the first, quantitative phase of the study.

Limitations

Limitations of the study include:

1. Because the convenience sampling will be used in the quantitative phase of the study, the researcher cannot say with confidence the sample will be representative of the population (Creswell, 2002).

2. In the quantitative phase of the study there is a potential risk of a non-response error, i. e., problems caused by differences between those who respond and those who do not in the event of a low response rate (Dillman, 2000).

3. Lack of multivariate normality, homogeneity of group variances and linearity among the predictors may decrease the statistical power of the discriminant analysis procedure in the first phase of the study (Tabachnick & Fidell, 2000).

4. The results of discriminant analysis have limited generalizability. Usually they generalize only to those populations from which the sample was obtained (Tabachnick & Fidell, 2000).

5. Due to the nature of qualitative research, the data obtained in the second phase of the study may be subject to different interpretations by different readers.

6. Because of the interpretative nature of the qualitative research, the investigator may introduce her bias into the analysis of the findings.

7. There is a potential for bias in the qualitative results interpretation, because the researcher is a student in the ELHE campus-based program. She has taken six courses online and has, herself, experienced some of the challenges of distance learning. She also knows personally some of the potential participants in the study.

However, the researcher does not belong to the ELHE-DE student cohort. Even when taking online courses, she was campus-based and used all the resources residential university study provides, including the library services, and frequent face-to-face communications with the academic advisor, faculty and fellow-students. In addition, being a Graduate Assistant and Presidential Fellow, she has never had to balance full time employment with doctoral studies in the DE environment. These arguments, though not strong enough to eliminate the possibility for bias, provide some reasons why the researcher decided to neglect Creswell's advice (1998) to qualitative investigators not to conduct research "in one's own backyard" (p.114).

Significance of the Study

This study may prove significant in contributing to the underdeveloped area of research related to the academic persistence of graduate students in distributed doctoral programs, and in posing numerous pertinent questions to guide future research. The main significance of this study lies in the fact no existing studies have explored doctoral student persistence in programs, like ELHE-DE, delivered in CMAL environments. Knowledge and understanding of the factors affecting students' persistence in distributed doctoral programs may provide additional insight into doctoral student attrition, as well

as their motivation "to keep going", while experiencing the double pressure of family and employment constraints and learning at a distance.

The research of this kind is significant to adult learners contemplating such learning experiences, but also to institutions of higher education offering graduate and professional degrees via distributed means (Kowalik, 1989). Knowing the predicting power of selected external and internal factors to students' persistence in the CMAL environment may assist post-secondary institutions in developing DE programs and creating distance learner support systems, which will help enhance doctoral persistence and degree completion. For the UNL Distribute Doctoral Program in Educational Administration the findings of this study may help to further improve the learning process and better meet the needs of distance learners.

Additionally, this study may yield valuable results due to the mixed methods research design. The need for both qualitative and quantitative research to determine the extent to which the variables can predict dropout in DE has been articulated in the literature (NSF, 1998; Parker, 1999; Tinto, 1993). This study will make a step forward by combining both quantitative and qualitative approaches within one study (Creswell, 2002; Tashakkori & Teddlie, 1998). This integration will provide a deeper insight into the problem of doctoral students' persistence in the CMAL environment, first, by identifying the predicting power of selected internal and external factors contributing to and/or impeding students' academic success, and, then, by exploring the participants' views regarding the statistical findings in more depth. Methodologically, this study will add to mixed methods research by elaborating such procedural issues of the sequential

explanatory design, as connecting the quantitative and qualitative data within a study and

integrating the results of the two sequential phases of the study.

Chapter 2

REVIEW OF LITERATURE

Doctoral student persistence and attrition seldom results from the influence of one factor. The following review of selected studies in the field highlights findings most influential in doctoral students' decisions to complete or drop out from a program of studies. It is organized according to persistence in doctoral programs, distance education student profile, persistence in distance education, and student persistence in distance education doctoral programs.

Persistence in Doctoral Programs

Academic and Social Integration

Nerad and Miller (1996) studied doctoral students cohorts who had been enrolled at the University of California – Berkeley for over three decades. They found doctoral student attrition seldom was the result of academic failure. Instead, it usually was a result of several factors, including student frustration with academic policies and procedures, student disappointment with program offerings and faculty advising, and student experiences with an inhospitable departmental culture.

Other researchers (Bair & Haworth, 1999; Bowen & Rudenstine, 1992; Lovitts, 2001; Ferrer de Valero, 2001) reported causes of attrition in doctoral education were not due to a deficit of academic skills, but a result of a lack of integration into a department. Ferrer de Valero's study (2001) identified departmental factors positively or negatively affecting time to doctoral degree and completion rates at a major mid-Atlantic region research university. These factors included departmental orientation, amount of advising, relationship between course work and research skills, relationships with academic advisor

and committee members, attitudes towards students, student participation, and peer support.

In her qualitative study of doctoral students' experiences, Golde (1996) argued some reasons to leave a doctoral program were rooted in departmental and disciplinary characteristics. She conducted case studies of four departments at a major research university. Interviews with 58 doctoral students, who dropped from the programs, were the primary data source. The analysis of each case described the problematic features of each department, which contributed to the attrition decision. Based on her examination of departmental contextual factors, Golde (1996) concluded "departmental context is a central contributor to attrition" (p. 156-157).

Other Golde's (1998, 2000) studies confirmed integration into the academic systems of a department played a critical role in doctoral student persistence. Even seemingly integrated students may lose their commitment to complete the degree because other opportunities surfaced, encroached on time and interest and subsequently took precedence.

Positive relations between a student and academic advisor were found to be important for doctoral student persistence (Ferrer de Valero, 2001; Gell, 1995; Golde, 1994; Lovitts, 2001; Manis et al., 1993; Presley, 1995/1996). In studies of doctoral student attrition, students' departure was reported to be due, in part, to inadequate or inaccurate advising, lack of interest or attention on the part of an advisor, unavailability of an advisor and/or faculty, or a negative relationship or even conflict between a student and the major advisor or significant faculty (Campbell, 1992; Golde, 1994, 2000; Huguley, 1988; Lovitts, 2001).

The style of advising can impede a doctoral student's progress. Bowen and Rudenstine (1992), for example, pointed out the most common type of advisors were those who allowed students to work at their own pace, without establishing any work schedule or timetable. Students too often become lost at different stages in their research, which created negative psychological states, inducing students to drop out of a program. At the same time, in recent nationally conducted surveys, most students reported they were satisfied with their advisors. They admitted positive mentoring relationships, including the quality and quantity of time spent together (Golde & Dore, 2001; NAGPS Survey Team, 2001).

Lack of persistence in traditional doctoral programs often has been attributed to lack of support and encouragement (Cesari, 1990; Tinto, 1988), while commitment to group and commitment to degree were found to be highly interdependent aspects of membership in a doctoral cohort (Dorn & Papalewis, 1995). The interest in and support of doctoral students for each other was reported to be an important factor in many studies (Brien, 1992; Ferrer de Valero, 2001; Hagedorn, 1993), although not as prominent as student/faculty relationships and student involvement in academic life (Lovitts, 2001).

Stages in Doctoral Education and Student Persistence

The first year in a doctoral program is reported to be crucial to the intention to stay and persist (Golde, 1998). Golde interviewed 58 students who had started and left one of the four Ph.D. programs offered by four different departments. First-year attrition accounted for about one-third of the overall attrition in three of the four departments. Common reasons for leaving were the lifestyle of a graduate student and a young faculty, wrong department, job market, and advisor mismatch.

As noted by Bowen and Rudenstine (1992), attrition during the first year of graduate school accounts for nearly a third of all doctoral student attrition. Another third drop out before getting candidacy and a final third postcandidacy, however, this data varies considerably by department and discipline. In their study of Ph.D. students at six major research universities (Berkeley, Chicago, Cornell, Princeton, Stanford, and the University of North Carolina), Bowen and Rudenstine identified three stages in doctoral education: (1) before the second year, (2) from the start of the second year until the completion of all the requirements besides the dissertation, and (3) after completion of all requirements but the dissertation (ABD). They found "more than twice as many students left these Ph.D. programs prior to achieving ABD status as left after achieving ABD status." (p. 111)

In the appendix to his work on undergraduate student attrition, *Living College,* entitled "Toward a theory of doctoral persistence" Tinto (1993) identified three stages of doctoral persistence: (1) the first year of study, which he called the transitional stage, (2) the period leading to candidacy, and (3) the completion of the dissertation. During the first stage, a student sought establishing membership in the academic and social communities of the university. During the second stage, interactions within the classroom and department or program pertaining to issues of academic competence played the central role in students' persistence. In both the first and second stages, student's experience appeared to be dependent on interactions with a wide range of faculty members. In the third stage, however, the focus shifted to the relationship with the advisor and the dissertation committee members. At this stage, persistence might be totally dependant on the behavior of a specific faculty member.

Dissertation Progress

A number of studies focused on the factors related to dissertation progress. Failure to complete a dissertation accounted for about 20% of the overall attrition from doctoral programs in education (Bowen & Rudenstine, 1992). The study conducted by Faghihi, Rakow and Ethington (1999) examined relationships among doctoral candidates' background characteristics, research preparation, environment and involvement, student-advisor relationship, research self-efficacy, and dissertation progress.

Faghihi et al. (1999) surveyed 97 students from three departments within a College of Education at an urban Southern research university who had completed their course work and passed comprehensive examinations during 1987-1997, but had not competed their degrees by December 1997. The study focused on differences in research self-efficacy and dissertation progress among the ABDs. Faghihi et al. found both students' research self-efficacy and their relationships with advisors and committee members significantly contributed to dissertation progress. At the same time, none of the student background characteristics had a significant effect on dissertation progress.

The qualitative study by Kluever (1997) explored personal and program experiences presumably affecting dissertation completion. 13 graduates and 9 ABD interviewed students believed there was more structure and direction associated with courses than with the independent activity required to complete a dissertation. They described the need for self-motivation and self-direction as important attributes for successful completion of their progress.

The lack of structure in the dissertation stage was found to be an obstacle to completion to 50% of All-But-Dissertation (ABD) students (Huguley, 1988).

Jacks, Chubin, Porter, and Connolly (1983) studied the doctoral candidates from 18 departments at 15 universities who never complete their dissertations (ABDs). Through the interviews conducted with 25 ABD individuals from such fields as psychology, sociology, zoology, physics, electrical engineering, and biochemistry, they identified nine reasons for not completing dissertation. Listed in the priority order based on the percent of significance for interviewed ABDs, these included: financial difficulties, poor working relationship with advisor and/or committee, substantive problems with the dissertation research, personal or emotional problems, receipt of an attractive job offer, interference of paid work with dissertation work, family demands, lack of peer support, and loss of interest in earning a Ph.D.

In her multiple regression study of psychology doctoral students and graduates, Muszynski (1988) identified seven factors aiding in dissertation completion: (1) supportive, interested, competent, and secure advisor; (2) accessible, manageable, and interesting topic; (3) internal strength, including independence, high motivation, ability to endure frustration; (4) self-imposed deadline or goal; (5) limited or no employment; (6) delaying internship until completion of dissertation; and (7) externally imposed incentives, like future employment. She also found depression, as well as stressful life events, may hinder dissertation completion. Too often students either do not seek appropriate support for such difficulties, or fail to recognize their gravity.

Such particular aspects of the dissertation process as topic selection and time available to work on dissertation were found to be important for successful degree completion (Allen, 1996; Grissom, 1985; Huguley, 1988; Lenz, 1994; Mah, 1986; McCabe-Martinez, 1993/1996; Pinson, 1997). In a dissertation study on time to

completion of doctorate (Allen, 1996), a majority of graduates reported longer completion had been problematic to them. The reasons cited most for discrepancies between expected and realized completion times were the need to work and alleviate financial concerns.

Based on a study of 192 graduates of the Department of Leadership and Policy Studies at Virginia Tech College of Education, Pinson (1997) identified factors impeding rapid completion of the dissertation. Results of the regression analysis showed four significant predictors of time to compete the dissertation: (1) how dissertation writing time was scheduled; (2) computer skills at the beginning of the dissertation; (3) perceived difficulties caused by job demands; and (4) changes in advisor or committee membership.

Motivation and Personal Goals

Doctoral student motivation is well explored in the literature on doctoral student attrition and persistence (Bauer, 1997; Brien, 1992; Butler, 1995/1996; Ferrer de Valero, 2001; Lees, 1996; Lovitts, 2001; McCabe-Martinez, 1993/1996; Reamer, 1990; Skudlarek, 1992). Motivation and goal setting were reported to be strongly related to doctoral degree completion. Students who had a "never give up" attitude were more likely to complete the doctorate than others (Brien, 1992; Reamer, 1990).

Based on the survey of 297 adult learners in two professional doctoral programs, Reamer (1990) reported a determination to succeed against all odds might be a personal quality to help students persist. Although most participants admitted they had wanted to leave the programs, unwillingness to experience failure had kept them in school. According to Brien (1992), the belief in what the doctorate degree could offer for a

student's career aspirations often were strong enough to encourage many students to diligently continue in a program.

In her dissertation, Bauer (1997) looked, in particular, at goal setting for Ph.D. candidates in the College of Letters and Science at the University of California, Los Angeles, and whether doctoral candidates who set goals and a time line were more likely to finish their dissertations within a normative period. The findings of the study were presented as claiming goal setting was related to timely completion of the dissertation. The advising practice, which impacted most on timely dissertation completion, was for advisors to encourage goal setting with a time schedule as a strategy to help advisees structure the dissertation process for themselves.

The significance of student self-concept and self-efficacy to doctoral students' persistence has not been well-studied. Presley (1995/1996), in her study of first-year African-American doctoral students, however, found students' positive views of themselves may relate to the successful completion of the doctorate, while students' negative views of themselves may relate to withdrawal. No significant difference was reported between completers and non-completers with respect to self-concept.

External Factors

Golde (1998) argued among the many reasons for leaving a doctoral program some are personal or external to the program. In a qualitative study grounded on the experiences of 139 doctoral graduates, Dinham and Scott (1999) identified factors presumably inhibiting and/or facilitating students' success in doctoral programs. Factors identified as hindering doctorate completion included financial difficulties, family lifestyle problems, cultural difficulties and isolation. According to the preliminary results

of the ANA Survey of Doctoral Programs in History (The American Historical

Association, 2002), financial problems and personal and family reasons were identified

as the most important factors causing history major students drop out from doctoral

programs.

Employment and financial factors were reported to be an obstacle for some

doctoral students who did not compete their programs. In the mixed-design study of

Hispanic school personnel (McCabe-Martinez, 1993/1996), employment and related job

responsibilities were identified as the most significant factors affecting degree progress

and program completion.

Financial problems also were found to be an impediment to persist (Bowen &

Rudenstine, 1992; Dolph, 1983; Lenz, 1994; Lovitts, 2001; Murrell, 1987; Tinto, 1993).

The financial support offered to doctoral students by colleges and universities was related

to attrition and persistence. Students who held research assistantships, teaching

assistantships, fellowships, or graduate assistantship were more likely to complete their

degrees than students who relied on other sources of funding. Bowen and Rudenstine

(1992) studied minimum completion rates at five universities to determine whether the

financial support for the students came from "institutional" or from "own support"

sources. They found minimum completion rates for one of the institutions were as low as

14.2% for students relying on their own support. This contrasted sharply to 41.8% for

students receiving institutional support (p. 179). The same pattern was found at the other

four institutions, which led the authors to conclude "students forced to rely primarily on

their own resources have had markedly higher attrition rates and longer TTD (time to

degree – N.I.) than comparable students who received financial aid" (p. 178).

In her case studies of six women, three "completers" and three ABDs, Lenz (1994) found time and money constrained ABDs. In Murrell's (1987) study of 489 graduates and non-graduates from the College of Education at Texas A & M University, graduates were more affected by financial problems than non-graduates. However in some studies financial factors were reported to be of smaller significance (Campbell, 1992; Girves & Wemmerus, 1988).

Giles (1983) conducted an ethnographic study to determine the effects of the graduate education experience on intra- and inter-family relationships, and how doctoral students balanced their dual student/spouse roles. Four principal themes affecting doctoral students' persistence were identified: (1) support from spouse and parents (financial, emotional/psychological, and basic needs); (2) factors affecting marital stability (financial problems, time pressures, children, communication, sexual concerns, role conflict, physical and emotional separation); (3) social relationships and interaction (status change, absence of married peers, fears associated with terminating relationships after graduation, special needs of the non-student); and (4) status (living arrangements, student-spouse role conflicts, locus of control, and financial conditions). Giles found relationships, which generally developed while in the degree program, did not serve as important support roles. Enrollment altered the student's perceived or actual status in either a positive or negative way.

At the same time, the findings of Dolph (1983), Frasier (1993), Girves and Wemmerus (1988) and Wagner (1986) indicated marital status was not related to either persistence or attrition. The number of children or dependents of doctoral students was found not to be a significant predictor of persistence (Dolph, 1983, Frasier, 1993).

The reported findings related to student attrition in doctoral programs were interpreted to mean there were meaningful relationships between certain individual, institutional and external factors and doctoral student persistence. In different combinations, unique to each student, they provided either supportive and positive or impeding and negative context for a student's progress in the doctoral program.

Distance Education Student Profile

Distance education students have become a major focus of study in distance education research within the last two decades (Thompson, 1998). A distance learner is perceived as a "dynamic individual" whose characteristics often change in response to both educational and life experiences (Gibson, 1992).

Holmberg (1995) pointed out there was no evidence to indicate distance students should be regarded as a homogeneous group. However, many distance students "do share broad demographic and situational similarities that have often provided the basis for profiles of the typical distance learner in higher education" (Thompson, 1998, p. 12). Characteristics included in such a profile are varied, but generally reflected some combination of demographic and situational variables, such as gender, age, ethnic background, disability, location, and life roles (Thompson, 1998).

The large majority of distant students were reported to be adults above 25 years of age, most of them employed and with family obligations (Schutze, 1986; Feasley, 1983). Holmberg (1995), citing studies from three decades, stated "the 25-35 age group seems to be the largest in most organizations" (p.12).

Most studies of distance learners in North American higher education report more women than men are enrolled in courses delivered at a distance (Thompson, 1998). For

example, in telecourses provided by four universities, 61% of the students were women (Hezel & Dirr, 1991).

In many institutions a typical distance learner no longer is place-bound (Thompson, 1998). Increasingly, students in close geographical proximity to traditional educational institutions are choosing distance study not because it is the only alternative, but rather because it is the preferred alternative. For example, Robinson (1992) reported more than 67% of the distance students in his study lived within 50 miles of the Open College.

With regard to the pursued goals, Schutze (1986) singled out four categories of distance learners: (1) those who enter or re-enter higher education to pursue mainstream studies leading to a full first degree or diploma; (2) those who re-enter to update their professional knowledge, or seek to acquire additional qualifications; (3) those without previous experience in higher education, who enroll for professional purposes, especially in courses of short duration; (4) those with or without previous experiences in higher education, who enroll for courses with the explicit purpose of personal fulfillment.

Since the majority of distance learners are time-bound adults with multiple roles and responsibilities, most have educational goals that are instrumental rather than developmental. Robinson (1992) reported most students at the Open College had instrumental goals, such as increased knowledge of a specific content area or performing more effectively in some aspects of their lives. Only three of the twenty students studied by Eastmond (1995) had goals considered personal or academic.

At the same time, Jegede (as cited in Buchanan, 1999) found distance learners, among other qualities, were characterized by autonomy, persistence, independence, self-

direction and flexibility. Such qualities as maturity, self-discipline, and assertiveness have been recognized as qualities inherent to a successful distance education student (Buchanan, 1999). Motivation is one major difference between distance learners and traditional classroom learners (Office of Technology Assessment, 1989). In the majority of studies, distance learners were found to be highly motivated (Simonson, Smaldino, Albright, & Zvacek, 2000). When motivated, highly intelligent students will learn even more under the most adverse circumstances, provided they have access to satisfactory and appropriate learning materials (Rumble, 1992).

Thus, the profile of a distance education learner includes the following characteristics: older than the typical undergraduate, probably female, likely to be employed full time, married, self-motivated and self-disciplined, often with instrumental rather than developmental educational goals. The convenience and flexibility offered by programs free from the constraints of place and often time, represent major benefits to learners attempting to "juggle multiple adult roles and responsibilities" (Thompson, 1998, p. 15).

Persistence in Distance Education

Selected demographic characteristics of DE students, as well as pursued educational goals, might have some relation to their academic success and hence, completion of the course or program of studies. Several studies reported a positive relationship between success and students' age (Cooper, 1990; Dille & Mezack, 1991; Fjortoft, 1996; Souder, 1994).

For example, in Fjortoft's (1996) study of adult persistence in DE post-baccalaureate professional program in pharmacy based on the sample of 395 persisting

and nonpersisting students, older students were less likely to persist than were younger students. Gibson and Graff (1992) found higher levels of success for older students were explained on the basis of the increased maturity, self-discipline, life experience, and financial responsibility for their educations. In addition, older students were more likely to have higher levels of education at the time of enrollment.

A number of studies (Ross & Powell, 1990; Powell et al., 1990; Robinson, 1992) revealed higher success rates among female than male distant students. Women's persistence was attributed to the lower proportion of women working full time outside the home, the higher rates at which women accessed institutional support structures, and the appeal of the distance format to woman who must integrate education into lives characterized by multiple roles. It was noted women had potentially higher levels of motivation because they more often work in occupational sectors in which career advancement was closely tied to academic upgrading. Martin (1990) offered evidence DE for many women was a "liberating and confidence building experience" (p.8)

The number of DE courses previously completed was reported as significantly related to future success in distance learning environment. This hypothesis was supported in several studies, which found first time students often lacked the necessary independence and time management skills needed for persistence in DE (Eisenberg & Dowsett, 1990; Ehrman, 1990).

Though demographic characteristics and prior experience with distance learning might be important for completion of a distance education course or a program, numerous studies indicated dropout was a multi-causal phenomenon influenced by a number of factors. Moore and Kearsley (1996) argued dropout usually was a result of no one cause,

but of an accumulation and mixture of causes. The situation further was confounded by the heterogeneity of students. Therefore, there was no single reason for student dropout, or no single measure, which will "dramatically reduce drop-out at a stroke" (Kember, 1990, p. 11).

Woodley and Parlett (1983) found sex, age, previous educational qualifications, occupation, and region of residence all were related to persistence for UK Open University students. The Open University example was interpreted as an almost linear relationship between DE students' dropout and their previous educational level (Simpson, 2000). Students with higher previous educational qualifications tended to do better than those with poorer qualifications. Those who found it difficult to reconcile the conflicting demands of their jobs, family, and studies tended to do less well than do those who found it difficult to direct their own learning. Rekkedal (1972) related age, previous education, years of school experience, and even month of enrollment with persistence. Kember (1981) found significant relationship between persistence and age, number of children, housing conditions, sex, sponsorship, and region of residence.

In an ethnographic study of barriers to persistence in five introductory academic courses in the natural resource sciences offered via DE by the University of British Columbia, Garland (1993) singled out four barrier categories: situational, institutional, dispositional, and epistemological. Both thirty persisting students and seventeen students who had withdrawn from a program encountered barriers to persistence in all four categories. Situational barriers included lack of time and poor learning environment, such as lack of support from family and peers, resource availability and course load. Institutional barriers included institutional procedures, cost and course scheduling/pacing.

The largest number of barriers to persistence in DE related to the psychological and social nature of DE students: uncertainty of an educational goal, stress of multiple roles, time management, learning style differences, overachievement and fear of failure.

A number of researchers developed formal models for predicting student completion specifically related to DE. Billings (1989) found students who made the most progress had the intention of completing a course in three months, submitted the first lesson within forty days, had higher entrance examination scores and high GPAs, had completed other corresponding courses, had a supportive family, had high goals for completing the program, lived closer to the instructor, and had good college-level preparation. The single most important variable was students' intention to complete.

Kennedy and Powell (1976) proposed a "descriptive model" which related the dropout process to characteristics and circumstances. Characteristics slow to change included such factors as educational background, motivation, and personality. Circumstances, which changed faster, included items such as health, finance, occupational changes, and family relationships. Characteristics and circumstances were brought together in a two-dimensional model. The pressure of adverse circumstances was seen as more likely to lead to at-risk situations or drop-out for students with weak characteristics than it was for those with strong characteristics.

Thompson (1984) discussed dropout from external courses in terms of the cognitive style of field-dependence. She postulated field-independent people would be better suited to correspondence study because of their greater levels of independence and autonomy. For field-dependent people to be more successful in DE, she proposed greater interaction with the instructor by methods such as systematic telephone tutoring.

Fjortoft (1995) developed a model of persistence in DE based on the literature of adult education. The variables studied included age, gender, GPA, satisfaction with college experience, intrinsic job satisfaction, ease of learning on one's own, intrinsic benefits of degree completion, and extrinsic benefits of degree completion. Based on a survey of 395 students, the results were interpreted to mean a positive relationship existed between perceived intrinsic benefits and persistence, whereas a negative relationship was found between both age and ease of learning on one's own and continued enrollment.

Kember's (1989a, 1990, 1995) in his longitudinal-process model of dropout from distance education tried to integrate all available models developed for conventional higher education (Bean, 1980, 1985, 1990; Tinto, 1975, 1987, 1993). The model integrated findings on DE students' academic success and attrition, as well as left room for variations and individual differences within each constituent category. Kember's model, and its significance for research on DE student persistence and attrition, was discussed in the Theoretical Perspective section of this Proposal.

<u>Student Persistence in Distance Education Doctoral Programs</u>

Most research on graduate student persistence in DE has been conducted on single courses (Woodley & Parlett, 1983; Morgan & Tam, 1999). Research on student persistence in doctoral programs delivered via DE is limited. For the most part, these have been dissertation studies, examining various issues related to doctoral student experiences in the distance learning environment and how such experiences affected their persistence in a program.

Using a phenomenology approach, Sigafus (1996) studied experiences of adult students pursuing a distance learning telecast program in Educational Administration at

the University of Kentucky. The analysis of the interview transcripts with 25 participants yielded four themes permeating the students' doctoral experiences: structure, pressure, support, and authority. Structure meant personal life role adjustments made to respond to increased demands on time, energy and the program structure itself. Pressure was associated with feelings of stress and strain in situations of increased demands on time and personal energy. The source of support students found most helpful came from peers in the program cohort, faculty members, families, friends, and employers. The theme of authority had two variations: authority or control from faculty members, employers, and significant others over specific aspects of life, and personal authority, maintained through structural and individual self-growth.

In a study of doctoral student persistence in an interactive compressed video distance learning environment, Huston (1997) found significant factors of success were spousal and financial support, intrinsic motivation, and positive interaction with the teachers and institution. The distance learning format did not affect the persistence of these graduate students. The findings also revealed the importance of group support provided by a cohort, the importance of an actively involved site coordinator, and the importance of access to e-mail.

Huston's (1997) findings were consistent with the results of Riedling's (1996) study of DE doctoral students in the field of educational policy studies and evaluation at the University of Kentucky. Student perceptions of the actual impact of social factors on distance learning were analyzed based on individual interviews with distance doctoral students, on-site observations of their classes, and supporting documentation. The students pointed out comradery as a major motivator in their choice of DE. The students

did not perceive themselves as alone, as the intensity of good dynamics was remarkable. Students reported the joy of learning as of equal importance. The attitude and skill of site coordinators was perceived as a key variable.

None of the studies have explored doctoral student persistence in the programs delivered in a computer asynchronous learning environment, like the ELHE-DE program. The three available studies of the UNL ELHE-DE program are doctoral dissertations focusing on the analysis of student experiences in selected computer-mediated classes (Scott-Fredericks, 1997; Patterson, 2002) and the process of community-building (Brown, 2000). However, none provided enough insight regarding the factors contributing to persistence in the distributed doctoral program. The proposed study is aimed to partially fill this gap in understanding the issues of doctoral student persistence and attrition in this unique learning environment, and in this way contribute to research on DE students' persistence.

Chapter 3

METHODOLOGY AND PROCEDURE

Research Design

This study will use a mixed methods (Tashakkori & Teddlie, 2003) design, which

is a procedure for collecting, analyzing and "mixing" both quantitative and qualitative

data at some stage of the research process within a single study, to understand a research

problem more completely (Creswell, 2002). The rationale for mixing is that neither

quantitative nor qualitative methods are sufficient by themselves to capture the trends and

details of the situation, such as a complex issue of doctoral students' persistence in the

distributed learning environment. When used in combination, quantitative and qualitative

methods complement each other and allow for more complete analysis (Green, Caracelli,

& Graham, 1989, Tashakkori & Teddlie, 1998).

In quantitative research, an investigator relies on numerical data (Charles &

Mertler, 2002). He uses postpositivist claims for developing knowledge, such as cause

and effect thinking, reduction to specific variables, hypotheses and questions, use of

measurement and observation, and the test of theories. A researcher isolates variables and

causally relates them to determine the magnitude and frequency of relationships. In

addition, a researcher himself/herself determines which variables to investigate and

chooses instruments, which will yield highly reliable and valid scores.

Alternatively, qualitative research is "an inquiry process of understanding" where

the researcher develops a "complex, holistic picture, analyzes words, reports detailed

views of informants, and conducts the study in a natural setting" (Creswell, 1998, p. 15).

In this approach, the researcher makes knowledge claims based on the constructivist

(Guba & Lincoln, 1982) or advocacy/participatory (Mertens, 2003,) perspectives. In qualitative research, data is collected from those immersed in everyday life of the setting in which the study is framed. Data analysis is based on the values that these participants perceive for their world. Ultimately, it "produces an understanding of the problem based on multiple contextual factors" (Miller, 2000).

In a mixed methods approach, the researchers build the knowledge on pragmatic grounds (Creswell, 2003; Maxcy, 2003) asserting truth is "what works" (Howe, 1988). They choose approaches, as well as variables and units of analysis, which are most appropriate for finding an answer to their research question (Tashakkori & Teddlie, 1998). A major tenet of pragmatism is that quantitative and qualitative methods are compatible. Thus, both numerical and text data, collected sequentially or concurrently, can help better understand the research problem.

While designing a mixed methods study, three issues need consideration: priority, implementation, and integration (Creswell, Plano Clark, Guttman, & Hanson, 2003). Priority refers to which method, either quantitative or qualitative, is given more emphasis in the study. Implementation refers to whether the quantitative and qualitative data collection and analysis comes in sequence or in chronological stages, one following another, or in parallel or concurrently. Integration refers to the phase in the research process where the mixing or connecting of quantitative and qualitative data occurs.

This study will use one of the most popular mixed methods designs in educational research: sequential explanatory mixed methods design, consisting of two distinct phases (Creswell, 2002, 2003; Creswell et al., 2003). In the first phase, the quantitative, numeric, data will be collected first, using a web-based survey and the data will be subjected to a

discriminant function analysis. The goal of the quantitative phase will be to identify potential predictive power of selected variables on the distributed doctoral students' persistence and to allow for purposefully selecting informants for the second phase.

In the second phase, a qualitative multiple case study approach will be used to collect text data through individual semi-structured interviews, documents, and elicitation materials to help explain why certain external and internal factors, tested in the first phase, may be significant predictors of the student persistence in the program. The rationale for this approach is that the quantitative data and results provide a general picture of the research problem, i. e., what internal and external factors contribute to and/or impeded students' persistence in the ELHE-DE program, while the qualitative data and its analysis will refine and explain those statistical results by exploring participants' views in more depth.

The visual model of the procedures for the sequential explanatory mixed methods design of this study is presented in Figure 1 (Appendix 1). The priority in this design is given to the qualitative method, because the qualitative research represents the major aspect of data collection and analysis in the study, focusing on in-depth explanations of quantitative results by exploring four maximal variation cases. A smaller quantitative component goes first in the sequence and is used to reveal the predicting power of the selected external and internal factors to ELHE-DE students' persistence and attrition. The quantitative and qualitative methods are integrated at the beginning of the qualitative phase while selecting the participants for case study analysis and developing the interview questions based on the results of the statistical tests. The results of the two phases will be also integrated during the discussion of the outcomes of the whole study.

<u>Variables in the Quantitative Analysis</u>

The research question in the first, quantitative phase "What factors (internal and external) predict students' persistence in the UNL Educational Administration Distributed Doctoral Program?" predetermines a set of variables for this study. Students' membership in one of the four matriculated groups, i. e., withdrawn and inactive, the first half of the program, the second half of the program, and graduated groups, was considered a dependent variable, the outcome or result of the influence of the independent variables (Isaac & Michael, 1981), and is labeled "student persistence". It is a categorical variable and will be used as a grouping variable in the discriminant function analysis.

Selected factors internal and external to the ELHE-DE program, which contribute to and/or impede DE doctoral students' persistence, are treated as independent or predictor variables, because they cause, influence, or affect outcomes. These factors were identified through the analysis of the related literature, theories of student persistence (Bean, 1980; Kember, 1994; Tinto, 1975), and a thematic analysis of individual semi-structured interviews with seven ELHE-DE participants, conducted during the Spring 2002 and reported at the 13th International Conference on College Teaching and Learning (Ivankova & Stick, 2002). The interview questions for 2002 study were developed based on the components of the three models of student persistence, discussed in the Theoretical Perspectives section of this proposal (Bean, 1980, 1985, 1990; Kember (1989a, 1990, 1995; Tinto, 1975, 1987, 1993). These factors correspond to the research questions for Phase I and are the following:

- ELHE-DE program related factors: program logistics, distance education pedagogy; academic workload, comfort level with the computer-mediated asynchronous learning environment, learning community;

- Academic advisor and faculty related factors: relations with the academic advisor, with faculty, dissertation committee members;

- Institution related factors: relations with staff, technology assistance, student support services (library, admissions, registration);

- Student related factors: personal goals, self-efficacy, self-discipline, time management, motivation;

- Factors external to the ELHE-DE program: family, employer, colleague, friend and significant other support; financial issues; family and work load.

Based on these factors 10 predictor variables were identified: "online learning environment", "program", "virtual community", "faculty", "student support services", "academic advisor", "family and significant other", "employment", "finances", "self-motivation". Table 1 represents the relationship between the factors and variables, and lists the survey items that measure each variable.

Table 1. Predictor Variables in the Quantitative Analysis

Factors	Predictor Variables	Survey Items
Related to ELHE-DE program	"Online learning environment"	Q14 a-j
	"Program"	Q13 a-g
	"Virtual Community"	Q13 h-l
Related to faculty and academic advisor	"Academic advisor"	Q15 a-m
	"Faculty"	Q13 m-r
Related to institution	"Student Support Services"	Q13 s-y
Related to student	"Self-motivation"	Q16 a-h
External to ELHE-DE program	"Family and significant other"	Q17 a-d
	"Employment"	Q17 e-h
	"Finances"	Q17 i-k

These variables will be measured on a continuous 7-point Likert-type scale in the questionnaire. For the test to have a statistical power, each variable will be represented by at least three items on the scale in the survey instrument.

Demographic characteristics, such as gender, age, academic degree, employment, previous degree earned, family status, year of enrollment, dropping out or graduating from the ELHE-DE program, number of courses taken in the program function as moderator variables. They affect the direction and/or strength of the relation between an independent and a dependent variable and account for the "interaction effect between an independent variable and some factor that specifies the appropriate condition for its operation" (Baron & Kenny, 1986, p. 1174).

Target Population and Sample

The target population in this study will be the students, both active and inactive, who are admitted to the ELHE-DE program and will be taking classes during the Spring 2003 semester. Also part of the target population will be students who have been graduated with an earned doctoral degree from the program and those who withdrew, or have been terminated from the program prior to Spring 2003. Students will be referred to as distance students if they have taken half of their classes via distributed means. Recruiting of participants will occur through the database of the available students in the ELHE-DE program maintained by the College of Education and Human Sciences Graduate Support Unit. The students' status will vary in terms of progress and/or completion of courses, number of online courses taken, and doctoral degree pursued.

Criteria for selecting the participants will include: (1) being in ELHE-DE vs. other programs; (2) time period of 1994-Spring 2003; (3) must have taken ½ of course

work via distributed means; (4) be either admitted, both active and inactive, graduated, withdrawn, or terminated from the program; (5) for those who just started the program, they must have taken at least one online course in the ELHE-DE program via distributed means. A total of 278 students in the database meet these criteria.

For the purpose of the first, quantitative phase of the study the convenience sample (Dillman, 2000) will be selected, which encompasses four categories of students, as identified in the program database: (1) those who are admitted and are active in the program (n=202); (2) those who are admitted but are inactive (n=13); (3) those who have been graduated (n=26), and (4) those who withdrew or were terminated from the program (n=38) since its inception in 1994.

For the purpose of the second, qualitative phase of the study, the purposeful sample, which implies intentionally selecting individuals to learn to understand the central phenomenon (McMillan & Schumacher, 1994; Miles & Huberman, 1994), i. e. students' persistence in the ELHE-DE program, will be used. The idea is to purposefully select informants, who will best answer the research questions and who are "information-rich" (Patton, 1990, p. 169) persons. Four participants from the responding ELHE-DE students, representing a typical response one from each group (Beginning, Matriculated, Graduated, and Withdrawn/Inactive), will be selected for case study analysis. In the survey informed consent form, the participants will be informed that four of them will be selected for the follow up voluntary individual interviews.

Due to the nature of the sequential design of this study, the selection of the participants for the second, qualitative phase will depend on the results from the first, quantitative phase. Based on these results, *maximal variation* sampling, in which a

researcher samples cases or individuals differing on some characteristic, will be used. This will allow the researcher to present multiple perspectives of individuals to "represent the complexity of our world" (Creswell, 2002, p.194). For this study, the participants will be selected based on the statistically significant difference results from the discriminant function analysis: potential participants will vary on how they respond to the questions (1,3,5,7) making up the variable yielding a statistically significant discriminant function. In case none of the discriminant functions is statistically significant, the participants will be selected based on their different responses to the variable making up the factor with the highest eigenvalue in factor analysis.

Phase I Quantitative

Data Collection

The first, quantitative phase of the study will focus on identifying internal and external factors contributing to and/or impeding students' persistence in the ELHE-DE program. The cross-sectional survey design, which implies the data will be collected at one point in time (McMillan, 2000), will be used. The primary technique for collecting the quantitative data will be a self-developed questionnaire, containing items of different formats: multiple choice, asking either for one option or all that apply, dichotomous answers like "Yes" and "No", self-assessment items, measured on the 7-point Likert-type, and open-ended questions. A panel of professors teaching in the ELHE-DE program was used to secure the content validity of the survey instrument. The questionnaire consists of twenty-four questions, which are organized into six sections or scales.

The first section of the survey asks questions related to the ELHE-DE program and participants' experiences in it. It includes the selection questions related to the status

of subjects in the program and within each of the four groups, factors contributing to the decision to proceed or withdraw, UNL support services, and participants' experiences in the program. The latter are measured on a 7-point Likert type scale from "Strongly disagree" to "Strongly agree" and will provide data regarding how the program-, faculty-, and institutional-related factors impact ELHE-DE students' persistence. The second section will measure participants' comfort level with the online learning environment and will provide additional data about the impact of institutional-related factors. A 7-point rating scale from "Very uncomfortable" to "Very comfortable" is used. The third section is focused on participants' experiences with their academic advisor and will provide data regarding the role of advisor in pursuing the doctoral degree in CMAL. A 7-point rating scale from "Extremely negative" to "Extremely positive" is used. The fourth section asks for self-evaluation of how motivated the students are to pursue doctoral degree via distributed means. The scale from 1 to 7, from "Strongly disagree" to "Strongly agree", is used. The fifth section is focused on how selected external factors have influenced participants' progress in the program. This scale will provide data to answer the fifth research question. These experiences are measured on a 7-point Likert type scale from "Strongly disagree" to "Strongly agree".

Demographic questions constitute the sixth, final section of the questionnaire. They will provide information regarding participants' age, gender, employment and Nebraska residency status, degrees earned and family structure. Some questions in the survey have an open-ended "Other (specify)" option to provide one correct answer for every subject in the study. A choice of "Not applicable" (NA) is included, when

necessary. The last question on the survey is open-ended and will ask for additional

information about students' experiences in the ELHE-DE program.

The survey questionnaire will be web-based and accessed through the URL,

which will be sent to all current and former ELHE-DE students identified by the

Department of Educational Administration. One of the advantages of web-based surveys

is that participants' responses will automatically be stored in a database and can be easily

transformed into numeric data in Excel or SPSS formats. Last known working e-mail

addresses are available for all the potential participants in the study. An informed consent

form will be posted on the web as an opening page of the survey. Participants will click

on the button below, saying "I agree to complete this survey", thus expressing their

compliance to participate in the study and complete the survey.

The survey instrument will be pilot tested on the 5.0% randomly selected

participants representing the former and current students in the ELHE-DE program. The

goal of the pilot study is to validate the instrument and to test its reliability. All names

from the eligible ELHE-DE participants, identified in the database will be entered into

the SPSS computer analysis system. A random proportionate by group sample of 15

participants will be selected. These participants will be excluded from the subsequent

major study. The results of the pilot survey will help establish stability and internal

consistency reliability, face and content validity of the questionnaire. Based on the pilot

test results the survey items will be revised if needed.

A week before the survey is available on the web, participants will receive a

notification from the Department about the importance of their input for the study. This

will help escape a low response rate, which is typical for web-based surveys. To decrease

the response rate error and solicit a relatively high response rate of the survey, a three-phase follow-up sequence will be used (Dillman, 2000). To those subjects who will have not responded by the set date (1) five days after distributing the survey URL, an e-mail reminder will be sent out; (2) ten days later, the second e-mail reminder will be sent; (3) two weeks later, the third e-mail reminder will be sent stating the importance of the participant's input for the study.

Data Analysis

Before the statistical analysis of the quantitative survey results, the screening of the data will be conducted on the univariate and multivariate levels (Kline, 1998; Tabachnick & Fidell, 2000). Data screening will help identify potential multicollinearity in the data, because multivariate tests are sensitive to extremely high correlations among predictor variables. Outlying cases must also be excluded from the analysis, as a case that actually is in one category of outcome may show a high probability for being in another category. These may result in the poor model fit (Tabachnick & Fidell, 2000).

Data screening will include the descriptive statistics for all the variables, information about the missing data, linearity and homoscedasticity, normality, multivariate outliers, multicollinearity and singularity. Descriptive statistics for the survey items will be summarized in the text and reported in tabular form. Frequencies analysis will be conducted to identify valid percent for responses to all the questions in the survey.

The research question "What factors (internal and external) predict students' persistence in the UNL Educational Administration Distributed Doctoral Program?" predetermines the choice of statistical test and analysis to be used in the study. Because

the purpose of this phase of analysis is to correctly predict the group membership for ELHE-DE students from a set of 10 predictors, the predictive discriminant function analysis will be used. The primary goal of discriminant analysis is to find the dimension or dimensions along which groups differ, as well as to find classification functions to predict group membership (Tabachnick & Fidell, 2000).

The underlying assumptions of discriminant analysis are multivariate normality, homogeneity of variances and linearity. That is why data screening at a primary stage in the analysis is important. If the data does not satisfy these assumptions, the statistical results will not be a precise reflection of reality. In case the data does not meet the underlying assumptions the transformation procedure will be performed.

The results of the analysis will be reported in the form of the discussion. The eigenvalues will provide the information of how much percent of variance is accounted for by the discriminant function. The Wilks' Lambda test will yield the Chi-Square value to show the statistical significance for the discriminat function. The standardized coefficients of the discriminant function will indicate how much relative unique contribution to the group differences is provided by the predictor variables. The discriminant variate that best discriminates the groups will be defined based on the linear relationship formula. The structure coefficients will show the correlation between the response variable and the discriminant function. Functions at group centroids will provide the discriminant scores on the discriminant function for each group, i.e. they will show how the groups differ on the discriminating variable.

All statistical analysis of the quantitative results will be conducted with the help of Statistical Package for Social Sciences software (SPSS), version 11.0.

Reliability and Validity

        In quantitative research, reliability and validity of the instrument are very important for decreasing errors that might arise from measurement problems in the research study. Reliability refers to the accuracy and precision of a measurement procedure (Thorndike, 1997). The stability or test-retest reliability of the survey instrument will be obtained through the pilot testing of the instrument. Test-retest reliability will show if the same results are obtained with repeated administering of the same survey to the similar study participants. Results of the actual survey then will be compared and correlated with the initial results in the pilot study and expressed by the "Pearson r coefficient" (Instrument reliability, 2001).

        Internal consistency reliability analysis of the items measured on the Likert-type scale also will be conducted on the results of the pilot study. This will help assess how well the various items in a measure appear to reflect the attribute, ELHE-DE students' persistence, which is being measured. Inter-item correlation will be examined on the basis of the correlation matrix of all items on the scale, corrected item-total correlation, and alpha if an item is deleted. The analysis will provide information on which items need rewording or even need removal from the scale.

        Validity refers to the degree to which a study accurately reflects or assesses the specific concept or construct that the researcher is attempting to measure (Thorndike, 1997). Content, criterion-related, and construct validity of the survey instrument will be established. Content validity will show the extent to which the survey items and the scores from these questions are representative of all the possible questions about doctoral students' persistence in the CMAL learning environment. The wording of the survey

items has been examined by a group of Educational Administration professors, who teach and help administer the ELHE-DE program. This helped assess whether the survey questions seem relevant to the subject it is aimed to measure, if it is a reasonable way to gain the needed information, and if it is well-designed.

Criterion-related validity, also referred to as instrumental or predictive validity, is used to demonstrate the accuracy of a measure or procedure by comparing it with another measure or procedure, which has been demonstrated to be valid (Overview: Reliability and Validity, 2001). For this purpose, the self-designed survey questionnaire for this study will be compared on the consistency of the results with existing instruments, measuring the same construct, doctoral students' persistence in the distributed programs. Continued efforts will be made to learn if one or more instruments are available. At this date nothing has been located.

Construct validity seeks agreement between a theoretical concept and a specific measuring device or procedure. To achieve construct validity, factor analysis of the Likert type survey items will be performed, both after the pilot and the major study. Factor loadings for survey items will show a correlation between the item and the overall factor (Tabachnick & Fidell, 2000). Ideally, the analysis should produce a simple structure, which is characterized by the following: (1) each factor should have several variables with strong loadings, (2) each variable should have a strong loading for only one factor, and (3) each variable should have a large communality, i. e. degree of shared variance (Kim & Mueller, 1978). Construct validity also addresses the concern of having the results produced by one's measuring instrument being able to correlate with other related constructs in the expected manner (Carmines & Zeller, 1991). The results of this

study will be correlated with the results obtained from other studies measuring related constructs (like identifying internal and external factors contributing to students' persistence in distance education environment).

<u>Phase II Qualitative</u>

<u>Data Collection</u>

The second, qualitative phase in the study will focus on explaining the results of the statistical tests, obtained in the first, quantitative phase. The multiple case studies design (Stake, 1995) will be used for collecting and analyzing the qualitative data.

A case study is a type of ethnographic design (Creswell, 2002; LeCompte & Schensul, 1999) and is an exploration of a "bounded system" or a case over time, through detailed, in-depth data collection involving multiple sources of information and rich in context (Merriam, 1988; Creswell & Maitta, 2002). In this study, the instrumental multiple cases (Stake, 1995) will serve the purpose of "illuminating a particular issue" (Creswell, 2002, p. 485), such as persistence in the ELHE-DE program, and they will be described and compared to provide insight into an issue.

The primary technique will be conducting in-depth semi-structured telephone interviews with four students, one from each group (Beginning, Matriculated, Graduated, and Withdrawn/Inactive). Individual interviews with the significant others of these selected participants might also be conducted. Triangulation of different data sources is important in case study analysis (Creswell, 1998). Academic transcripts will be used to validate the information obtained during the interviews. The participants will be asked for consent to access their transcripts, while the information regarding the courses and grades will be received through the researcher's advisor. I will also ask participants to provide

elicitation materials or physical artifacts that might have a relationship to their persistence or non-persistence in the ELHE-DE program. Selected online classes taken by the participants and archived on a Lotus Notes or Blackboard server will also be examined for supporting information.

The Interview Protocol will include ten-fifteen open-ended questions, and will be pilot tested. The content of the protocol questions will be grounded in the results of the statistical tests of the relationships between the participants' group membership and the predictor factors as related to students' persistence in the program, and will elaborate on them. The questions will focus on the issue of persistence in the ELHE-DE program and about the details of the cases selected on maximal variation principle. The protocol will be pilot tested on three students selected from the same target population, but then excluded from the full study. Debriefing with the participants will be conducted to obtain information on the clarity of the interview questions and their relevance to the study aim.

The participants will receive the interview questions prior to the scheduled calling time, and will be informed the interview will be tape-recorded and transcribed verbatim. Respondents will have an opportunity to review and, if necessary, correct the contents of the interview after it has been transcribed.

Data Analysis

In the qualitative analysis, data collection and analysis proceed simultaneously (Merriam, 1998). In the second, qualitative phase of the study, the text and image data obtained through the interviews, documents and elicitation materials will be coded and analyzed for themes with the help of the Qualitative Software and Research (QSR) N6, software for qualitative data analysis.
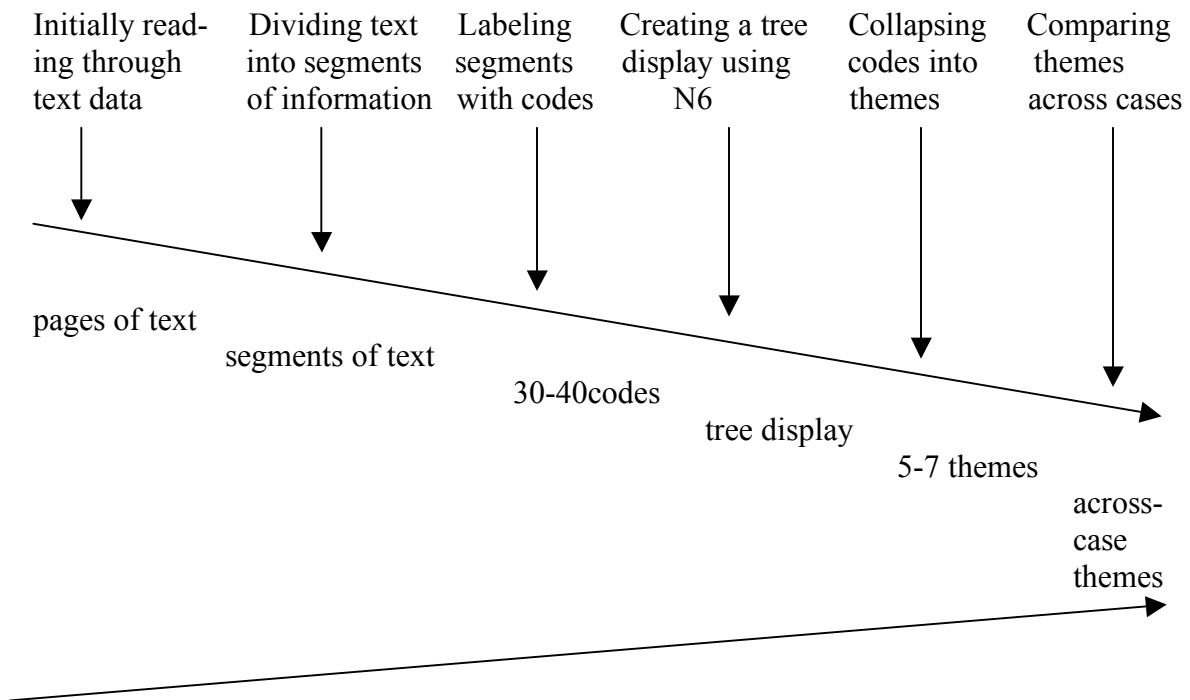
The steps in qualitative analysis will include: (1) preliminary exploration of the data by reading through the transcripts and writing memos; (2) coding the data by segmenting and labeling the text; (3) using codes to develop themes by aggregating similar codes together; (4) connecting and interrelating themes; and (5) constructing a narrative (Creswell, 2002). To augment the further discussion, the visual data display will be created to show the evolving conceptual framework of the factors and relationships in the data (Miles & Huberman, 1994).

Data analysis will involve developing a detailed description of each case of Beginning, Matriculated, Withdrawn, and Graduated ELHE-DE students. During the analysis a researcher will situate the case within its context so the case description and themes are related to the specific activities and situations involved in the case (Creswell & Maitta, 2002). This analysis is rich in the context or setting in which the case presents itself (Merriam, 1998). Based on this analysis, a researcher provides a detailed narration of the case, using either an elaborate perspective about some incidents, chronology, or major events followed by an up-close description.

In multiple case study design, the analysis is performed at two levels: within each case and across the cases (Stake, 1995). Analysis of this data can be a holistic analysis of the entire case or an embedded analysis of a specific aspect of the cases (Yin, 1994). In the proposed study, first, each case of the selected ELHE-DE students will be analyzed for themes. Then, all the cases will be analyzed for themes that are either common or different. This will show the extent to which the identified internal and external factors have similar or different effect on the study participants as related to their academic persistence. In the final phase, the researcher will interpret the meaning of the cases and

report the "lessons learned" (Lincoln, & Guba, 1985). Figure 2 represents the visual

model of qualitative analysis for this study (Adapted from Creswell, 2002 and Lu, 2003).

Figure 2. Visual Model of Qualitative Data Analysis

| Initially read-ing through text data | Dividing text into segments of information | Labeling segments with codes | Creating a tree display using N6 | Collapsing codes into themes | Comparing themes across cases |

pages of text

segments of text

30-40codes

tree display

5-7 themes

across-case themes

Establishing Credibility

The criteria for judging a qualitative study differ from quantitative research. In

qualitative design, the researcher seeks believability, based on coherence, insight, and

instrumental utility (Eisner, 1991) and trustworthiness (Lincoln & Guba, 1985) through a

process of verification rather than through traditional validity and reliability measures.

The uniqueness of the qualitative study within a specific context precludes its being

exactly replicated in another context. However, statements about the researcher's

positions – the central assumptions, the selection of informants, the biases and values of

the researcher – enhance the study's chances of being replicated in another setting

(Creswell, 2003).

To validate the findings, i. e., determine the credibility of the information and whether it matches reality (Merriam, 1988), four primary forms will be used in the second, qualitative, phase of the study: (1) triangulation – converging different sources of information (interviews, documents, artifacts); (2) member checking – getting the feedback from the participants on the accuracy of the identified categories and themes; (3) providing rich, thick description to convey the findings; and (4) external audit – asking a person outside the project to conduct a thorough review of the study and report back (Creswell, 2003; Creswell & Miller, 2002).

Advantages and Limitations of the Sequential Explanatory Mixed Methods Design

The strengths and weaknesses of mixed methods designs have been widely discussed in the literature (Creswell, 2002; Creswell, Goodchild, & Turner, 1996; Green & Caracelli, 1997; Moghaddam, Walker, & Harre, 2003).

Advantages of this design include:

1. Easy to implement for a single researcher, as it sequentially proceeds from one stage to another.

2. Sequential explanatory mixed methods design is useful for exploring quantitative results in more detail.

3. This design is especially useful when unexpected results arise from a quantitative study (Morse, 1991).

The limitations of this design include:

1. As any mixed methods design, it requires lengthy time to complete.

2. It requires feasibility of resources to collect and analyze both types of data.

3. Quantitative results of the first phase may show no significant differences.

<u>Research Permission and Ethical Considerations</u>

Ethical issues will be addressed at each phase in the study. In compliance with the regulations of the Institutional Review Board (IRB), the permission for conducting the research must be obtained (Institutional Review Board, 2001). The Request for Review Form will be filed, providing information about the principal investigator, the project title and type, source of funding, type of review requested, number and type of subjects. Application for research permission will contain the description of the project and its significance, methods and procedures, participants, and research status. This project will be accorded an expedited-middle status, since the interviews with the participants will be audio taped, though the study will be conducted in a normal social setting, its topic does not fall in the sensitive category, and the subject population is over nineteen.

An informed consent form will be developed. The form will state that the participants are guaranteed certain rights, agree to be involved in the study, and acknowledge their rights are protected. A statement relating to informed consent will be affixed to the web survey and reflect compliance by participation.

The anonymity of participants will be protected by numerically coding each returned questionnaire and keeping the responses confidential. While conducting the individual interviews with the selected respondents, they will be assigned fictitious names for use in their description and reporting the results. All study data, including the survey electronic files, interview tapes, and transcripts, will be kept in locked metal file cabinets in the researcher's office and destroyed after a reasonable period of time. Participants will be told summary data will be disseminated to the professional community, but in no way it will be possible to trace responses to individuals.

<u>The Role of the Researcher</u>

The researcher's involvement with data collection in the two phases of this study is different. In the first, quantitative phase, the researcher will administer the survey and collect the data using the standardized procedures, including the convenience sampling, naturally existing groups, and reliability and validity checks of the instrument. The data analysis will be performed using rigorous statistical analysis techniques and the results will be interpreted based on the established values for the statistical significance of the functions.

In the second, qualitative phase, the researcher will assume a more participatory role due to the "sustained and extensive experience with participants" (Creswell, 2003, p. 184) and personal involvement with the research topic. The researcher is a student in the ELHE campus-based program. She has completed six online courses and has, herself, experienced some of the challenges of distance learning. It bears noting, she has developed and is teaching online graduate level research methods course via Blackboard, and has assisted with teaching courses via the Lotus Notes platform. Also she has conducted, published, and presented studies dealing with different issues of teaching and learning via DE, including both faculty and students as the participants. The researcher also knows some of the participants in the study through distance classes and campus meetings. In addition, during the data collection procedure, she might develop cordial and supportive relations with some participants. All of these experiences introduce a possibility for subjective interpretations of the phenomenon being studied and create a potential for bias (Locke, Spirduso & Silverman, 2000).

At the same time, it bears noting the researcher does not belong to the ELHE-DE student cohort. Even when taking online courses, she was campus-based and used all the resources residential university study provided, including the library services, and frequent face-to-face communications with the academic advisor, faculty and fellow-students. In addition, being a Graduate Assistant and University Presidential Fellow, she never had to balance full time employment with doctoral studies in the DE environment.

These arguments, although not strong enough to eliminate the possibility for bias, provide some reasons why the researcher decided to neglect the warning not to conduct a qualitative research "in one's own backyard" (Creswell, 1998; Glesne & Peshkin, 1992). Extensive verification procedures, including triangulation of data sources, member checking, and thick and rich descriptions of the cases will be used to establish the accuracy of the findings and to control some of the "backyard" research issues. Furthermore, a careful audit will be done by the researcher's academic advisor and dissertation supervisory committee on all research procedures and data analysis in the study.

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Appendix 1

Visual Model for Mixed Methods Procedures

(Sequential Explanatory Mixed Methods Design)

Figure 1. Visual Model for Mixed Methods Procedures (Sequential Explanatory Mixed Methods Design)

Phase	Procedure	Product

Quantitative Data Collection
- Cross-sectional web-based survey (N=279)
- Numeric data

Quantitative Data Analysis
- Data screening (univariate, multivariate)
  - Descriptive statistics, missing data, linearity and homoscedasticity, normality, multivariate outliers, multicollinearity and singularity
- Factor analysis
  - Factor loadings
- Frequencies
  - Frequency, valid percent
- Discriminant function analysis
  - Eigenvalues, Chi-square, standardized canonical discriminant function coefficients Structure matrix, Functions at group centroids
- SPSS quantitative software, v.11

Cases Selection
- Purposefully selecting the participants for case studies (N=4), 1 from each category
- Maximal variation sampling
- Cases (N=4)

QUALITATIVE Data Collection
- Individual in-depth telephone semi-structured interviews with 4 participants and their significant others
  - Text data (interview transcripts, documents, artifact description)
- Documents
- Artifacts
  - Image data (photographs)

QUALITATIVE Data Analysis
- Coding and thematic analysis
  - Codes and themes
- Within-case and across-case theme development
  - Similar and different themes
  - Visual data display
- QSR N6 qualitative software

Interpretation of Entire Analysis
- Explanation of the meaning of quantitative results
  - Discussion
  - Recommendations for future studies
- Interpretation of the meaning of cases

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