THE ROLE OF COURSE DELIVERY METHODS IN PERSISTENCE AMONG NONTRADITIONAL UNDERGRADUATE STUDENTS AS FOUND IN TWO FOUR-YEAR PUBLIC INSTITUTIONS

by

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ABSTRACT

CARLIE BUNCH HOUCHINS. The role of course delivery methods in persistence among nontraditional undergraduate students as found in two four-year public institutions. (Under the direction of Dr. ALAN MABE)

This dissertation investigated the association of course delivery method with persistence of first-time, beginning, and transfer nontraditional undergraduate students at two public universities over a 6-year period (2009–2015). Research exists on nontraditional undergraduates, nontraditional instructional methods/delivery, and persistence among college students; however, most research does not combine these constructs in the way this dissertation has. This dissertation adds to research on persistence among a little researched, but large and growing, population in higher education, nontraditional students, by examining the association of course delivery methods with their persistence. Analysis of the data sets revealed strong persistence results at Rush (77%) and Southeast (68%), well above persistence for first-time beginning and transfer students entering in Fall 2009 or Spring 2010 at the two institutions, and exceeding rates reported in other studies of nontraditional students. Logistic regression did not support the researcher's original non-directional hypothesis that course delivery method may be associated with persistence among nontraditional students at these two institutions. This dissertation study adds to research in four ways: (a) inclusion of an institutional lens added contextual data for better understanding of the quantitative result; (b) considering course delivery method as a factor in persistence; (c) providing contrast to the deficit perspective of attrition by focusing on persistence; and (d) adding evidence to the importance of multiple, cross-campus strategies that respond to student needs.

DEDICATION

To my parents, William Carl Bunch and Ruby Eaves Bunch, whose lives were the very definition of persistence. Growing up deaf in the rural south during the great depression and World War II, they were educated in state residential institutions. They went on to marry, raise a family, and have careers that provided personal satisfaction and economic security. They knew the difference education made in their own lives and encouraged my pursuit of higher education. Their love and example of living every day with determination is the foundation of my life.

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- My friends who still don't know why I did this but were always willing to listen, sharing in my frustration or celebrate my success

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- My sister, Susie Masotti, the quintessential cheerleader
- My children, Matthew and Morgan, who I know will persist and succeed
- My husband, Carter, who always sees more in me than I imagine possible and is truly my better half.

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CHAPTER 1: INTRODUCTION

Overview

Persistence toward degree completion is a desired outcome of higher education for all stakeholder groups. Although their reasons differ, individual students, institutions, businesses, and society at large share this common interest. However, individual and collective persistence remain a relentless challenge for these stakeholders.

This dissertation adds to research on persistence among a specific population in higher education—nontraditional students. Furthermore, the research examines the role of factors contributing to and/or impeding persistence among nontraditional undergraduate students at two 4-year institutions using multiple case study design.

Need and Purpose

Persistence is a problem of practice across all American education. Beginning with the K–12 educational system, progress toward higher education and degree completion has many departure points. One analysis suggests that of every 100 students entering high school, 75 students graduate, and among those, 43.5 students enter college, and only 26.1 will graduate (Wendler et al., 2012). Rates of undergraduate persistence to degree vary by institution type and level of control as well as across different student populations. In particular, nontraditional undergraduates have much lower persistence rates than their traditional counterparts (Brown, 2002; Calcagno, Crosta, Bailey, Jenkins,

& Columbia University, 2006; Cavote, 2007; Choy, 2002; Nakajima, Dembo, & Mossler, 2012).

Brown (2002), citing a 1995 National Center for Education Statistics (NCES) study, found that persistence rates beyond the first year among nontraditional students were one-third less than among traditional students, at 62% and 94%, respectively. Among bachelor's degree–seeking students, Choy (2002) found that after 3 years, nearly 9 out of 10 traditionally aged students continued, whereas only half of nontraditional students were still enrolled in undergraduate studies, revealing a gap of 38 percentage points. In the same study, Choy reported that after 5 years, the gap narrowed between the two groups to 22.6 percentage points. More recent studies (Calcagno et al., 2006; Cavote, 2007; Nakajima et al., 2012) found similar results: Nontraditional students were less likely to persist than their traditional counterparts.

Nontraditional Students

In the literature, more than a dozen different characteristics are used to define nontraditional students; some scholars use one or two characteristics, some use several, and some use nearly all. According to Choy (2002), Stokes (2006), and the NCES (as cited by Soares, 2013), nontraditional students make up the majority of students in higher education in the United States. Traditional students (i.e., those who are aged 18–22 years, are recent high school graduates, and are living on campus) make up approximately 15% of all students in higher education, undergraduate and graduate, and, importantly, are declining in proportion. In contrast, if one uses all or most of the identified characteristics, nontraditional students represent 85% of students seeking higher

education at all levels, and their numbers are growing. I explore and analyze the various ways of thinking about nontraditional students in the literature review in chapter 2.

Within the undergraduate population, three out of four students have at least one nontraditional characteristic albeit different ones, such as being older, being employed full time, having dependents, being a single parent (U.S. Department of Education, NCES, 2002b). The NCES (2013) projects that by 2021, students older than 25 years attending degree-granting institutions will increase in number by 1.85 million and represent 43% of total enrollment in these institutions; for comparison, in 2010, these students represented 38% of enrollment. Interestingly, the highest growth rate (25%) is among students aged 35 years and older, who will represent 54% of the total growth projected for all students aged 25 years or older.

Diverse, large, and increasing, the nontraditional learner population represents potential growth and opportunity for higher education. Milheim (2005) and Soares (2013) presented a multifaceted picture of nontraditional students: working adults with significant life responsibilities that include careers, children, and other family members. According to these authors, their numbers have been on the rise since the 1970s, and nontraditional or posttraditional students are now the majority on college campuses. Jepsen and Montgomery (2012) and Ross-Gordon (2011) added to the description of nontraditional higher education students: employees who study, part-time students, and those who are independent of family support. Finally, Buglione (2012) added low income, first-generation status, and being an immigrant as important characteristics of nontraditional students. This is a growing segment of the educational consumer market

whose needs diverge from the needs of the traditionally served population of higher education institutions.

Given the multiple roles and responsibilities of nontraditional students, it is not surprising that they seek flexibility and customization when considering their options for pursuing higher education (Ross-Gordon, 2011). According to a 2000 study by the NCES (as cited in Choy, 2002), moderately nontraditional (two or three nontraditional characteristics) and highly nontraditional (four or more nontraditional characteristics) students were 22.4% more likely than other undergraduate students to participate in any form of distance learning. More recent developments in delivery and access, largely fueled by technology, likely contribute to even higher levels of participation in nontraditional approaches to higher education by nontraditional students than the statistics reported here.

Numerous studies have been undertaken to examine the views of nontraditional students toward various nontraditional approaches. Some researchers have looked at a broad category, such as distance learning, whereas others have studied specific types of nontraditional approaches, such as 100% online or hybrid modes of instruction and learning. The findings range from the perceived positives, such as lower cost and enhanced convenience, to unsatisfactory compromises made by students in terms of interaction with other students and faculty. A sampling of these studies is in Table 1.

By and large, nontraditional students find value in delivery of higher education that increases their access to courses through technology; however, they also recognize the likely concessions they make with regard to peer and faculty interaction in nontraditionally delivered courses.

Table 1: Summary of key research studies on nontraditional student experiences and attitudes toward nontraditional approaches

Study	Subject	Findings
Thompson, Orr, and Thompson (2001)	Nontraditional students in a rural community	• Increased access • Supported completion
Sharp and Cox (2003)	Nontraditional students in distance education programs	• Less expensive • Ease of access
Pontes and Pontes (2012b)	Nontraditional students enrolled in distance education	• Fewer enrollment gaps • Persistence • Progress toward degree
Rovai, Wighting, and Liu (2005)	Nontraditional students enrolled in online education	• Attrition resulting from impersonal nature of online education
Carriuolo (2002)	Nontraditional students enrolled in online education	• Students missed personal support and social interaction
Maxfield (2008)	Nontraditional students enrolled in 100% online course	• Dissatisfaction with student–student and student–instructor interaction • Value in flexibility and convenience • Transition from skeptics to advocates
Blankson and Kyei-Blankson (2008)	Nontraditional students enrolled in hybrid course	• Method enhanced overall leaning experience • Recommended to other students and faculty

Table 1 (*continued*)

Study	Subject	Findings
Rodriguez, Ooms, Montanez, and Yan (2005)	Survey of 700 professional and graduate students; 61% aged ≥25 years	• High satisfaction with online course experience • Same quality of learning as face-to-face course

Studies of nontraditional methods of course delivery have largely focused on comparing the effectiveness of online or hybrid with traditional instruction, finding the nontraditional to be comparable and, in some regards, more beneficial to students. Other studies of course delivery have concentrated on measuring the student learning outcomes or explaining student persistence and attrition from distance education online programs. Research comparing the effect of course delivery type on nontraditional student persistence is scarce.

Relatively little research has been done to understand nontraditional students' persistence and the factors that influence it (Bailey, 2005; Donaldson & Townsend, 2007). Since the 1970s, the population of students aged 25 years and older has increased by nearly 300%, totaling 6.5 million in 2011 and representing 42.3% of enrollment ("Condition of Education," 2011). In contrast, Donaldson and Townsend (2007) reviewed seven scholarly journals over a 13-year period, finding only 41 out of 3,219 articles focused on adult students in higher education; of these, only 15 articles, or 0.46%, addressed student retention or academic success of adult students.

Statement of the Problem

Nontraditional students, while representing a large and growing market for higher education, continue to leave institutions in disproportionate numbers before completing

their degrees; only 11% of highly nontraditional students earn a bachelor's degree (Choy, 2002). Thirty-seven percent of nontraditional students seeking a bachelor's degree and 47% of those pursuing an associate's degree drop out before graduating.

Characteristics of nontraditional students, such as employment and having dependents, create barriers to persistence at the individual student level and challenges at the institutional level. A 2011 study by Public Agenda (Hagelskamp, C., Schleifer, D., & DiStasi, C., 2013) focused on the realities of why so many students leave higher education before completing their education, finding the following:

- The majority who leave are self-supporting and do not receive scholarships or other financial aid.
- The need to work to support themselves is a greater financial challenge than finding money to attend college.
- The competing priorities of work and school create greater stress for these students than securing resources for tuition and create the greatest barrier to resuming their studies.

Students in this report who did not complete their degrees pointed to changes in higher education that would support them in balancing academics and employment. These respondents preferred completion strategies addressing convenience, finances, and academic preparation. In particular, students who did not graduate favored (a) making more financial aid options available to part-time students (81%); (b) more flexibility in scheduling of courses, for example, offering courses on weekends, in the evening, and in summer (78%); and (c) putting more classes online (58%).

Persistence among nontraditional undergraduates is affected by myriad other/additional factors at the individual, institutional, and environmental levels. These include the "environmental press" in Bean and Metzner's (1985) student attrition model, background or life circumstance variables, enrollment behaviors, academic and social integration, and cost–benefit or rational choice (Attewell, Heil, & Reisel, 2011; Bean & Metzner, 1985; Cabrera, Castaneda, Nora, & Hengstler, 1992; Cabrera, Nora, & Castaneda, 1993; Metzner, 1987; Ruot, 2013; St. John, Cabrera, Nora, & Asker, 2000a). These elements are more thoroughly explored in the literature review (chapter 2).

Purpose of the Research

The action to continue or withdraw is taken by the individual in the larger context of an institution, with varying influences and factors affecting the decision, and has consequences for all involved. Understanding individual and environmental factors, such as financial difficulties, family responsibilities, and poor preparation, which affect nontraditional students' ability to persist in pursuit of their educational goals, is critical to institutions serving those students and to the institutional leadership. Colleges and universities have made accommodations in student services and other nonacademic programming to better assist nontraditional undergraduates. These initiatives largely focus on factors outside the direct control of institutions and have had limited impact on students' persistence to degree completion, as evidenced by the sustained low rates of graduation among this population. Nontraditional student persistence in relation to factors that are within a given institution's direct control, for example, what is taught, how, and when, is limited and represents a gap in the literature, which has consequences for both institutions and individual students.

Persistence, nontraditional students, and nontraditional delivery methods are topics of significance in higher education, as evidenced by the research studies conducted on these individual constructs. However, little research has focused on the intersection of nontraditional students and nontraditional delivery methods and their impact on persistence outcomes. This dissertation presents a research study juxtaposing the persistence results of nontraditional students with one of the "levers" available to an institution, specifically, how a course is delivered, with an intent to provide insight into and understanding of this critical issue in higher education.

Overview of the Methodology

The multiple case study examines the role course delivery plays in persistence among nontraditional undergraduate students at two 4-year institutions. In the methodology chapter (chapter 3), research design, the research questions, data collection procedures, and methods of analysis are presented in detail. Interviews with institutional officials and document review provided information on the environment of each institution, including policies and practices focusing on nontraditional students, course delivery methods, and changes in online and hybrid course delivery over the last 10 years that may have affected nontraditional students. Data sets from the institutions provide data on student enrollment behavior, background characteristics, and life circumstances for statistical analysis of course delivery method and persistence among nontraditional students. Strengths and limitations are presented, including the data sets, the utilized methodology's, and mine as the researcher. Qualitative and quantitative results from the case studies are analyzed individually and then compared via cross-case analysis for

further insight into the role that course delivery method may play in nontraditional student persistence.

As a multifaceted problem of practice, nontraditional student persistence challenges higher education institutions across the United States. The multiple case study looks at the issue through the lens of the institution, focusing specifically on course delivery methods and their influence on persistence among nontraditional students. Qualitative research in the form of interviews with administrators and document review provide the context, informing our understanding of the institutional perspective and the environment in which a specific nontraditional student behavior, that is, persistence, occurs. Embedded quantitative analysis, via logistical regression, was used to understand what, if any, relationship exists between nontraditional student persistence and course delivery method in these two institutions during the study period.

Two 4-year universities provide the cases for this study. Each has historically served nontraditional students. The institutions' policies, procedures, and intentions with respect to online and hybrid course delivery were juxtaposed with nontraditional student outcomes to form a more complete understanding of persistence and completion among this large and growing population in higher education. After I analyzed each institution independently, I conducted a cross-case analysis to determine replication or contrast between the cases.

Research Questions and Hypotheses

The overarching purpose of this study is to understand the role course delivery method plays in persistence among nontraditional undergraduate students at two 4-year

institutions in the southeastern United States. Specifically, I examine the following research questions related to the overarching purpose:

1. What is the context of online and hybrid course delivery for nontraditional undergraduate students at each institution? That is, how are online and hybrid course delivery methods presented or described in institutional materials for nontraditional students, for example, policies and documents? How do these institutions define online and hybrid course delivery methods? What proportion of courses is available to nontraditional students in a nontraditional format, and how has availability changed in the past 10 years?
2. Taking into account background, life circumstances, and enrollment behavior, to what extent is course delivery method (majority online, majority hybrid, or majority traditional) predictive of persistence among nontraditional students at each institution?
3. What similarities and differences in context and student results can be seen across the two institutions?

Organization of the Dissertation

Following this introductory chapter, chapter 2 provides a review of relevant literature establishing background and context and framing the research methodology. In the literature review, the key constructs of the research are described based on prior research: nontraditional students, course delivery methods, and persistence. The literature review concludes with an assessment of the adequacy of the existing research on the role course delivery method plays in persistence among nontraditional undergraduate students.

The next chapter, "Research Methodology," details the components of the research method: research design, the research questions, data collection procedures, and methods of analysis. Strengths and limitations of the data sets, methodology utilized and that of the researcher are presented.

Chapter 4 presents the research findings. Each of three research questions is addressed in the chapter with results from both the qualitative and quantitative data analysis. Qualitative data are organized, categorized, and presented in ways appropriate for revealing patterns and insights. The results of the quantitative investigation include descriptive statistics, logistic regression analysis, testing for statistical significance, and evaluation of practical significance. The dissertation closes with chapter 5, which includes a discussion of the results and their relation to prior research, consideration of the meaning of the results, and recommendations for future research.

Significance of the Study

Research exists on nontraditional undergraduates (varying definitions), nontraditional instructional methods/delivery, and persistence among college students; however, most research does not combine these constructs to predict student outcomes. An abundance of data describes the size and growth of the nontraditional undergraduate population, verifying the importance of this student group to higher education. Persistence research over the past four decades, growing out of Tinto's (1993) student integration model, has been productive in identifying and understanding factors important to traditional, residential undergraduates; however, fewer studies have focused on nontraditional student persistence. Importantly, the limited persistence research on nontraditional undergraduates emanates from a deficit orientation, focusing on factors

that negatively impact their chances of persistence, finding them inadequate and insufficient when compared with traditional college students.

The research study presented in this dissertation provides insight into the influence of course delivery method on persistence for nontraditional students at the selected universities by examining qualitative and quantitative data. In combination, the institutional context and student outcome data are descriptive and explanatory, allowing exploration of contributory relationships and resulting in a richer, more complete view of the two universities and their nontraditional students.

CHAPTER 2: LITERATURE REVIEW

In this chapter, I more fully characterize nontraditional students in higher education and course delivery methods, ultimately examining the intersection of the two to explore persistence rates for the population of interest. I begin by defining and describing nontraditional students according to the research done to date; furthermore, I discuss their participation rates, patterns of attendance, and goals in higher education. Next, I review the development of course delivery methods beyond face-to-face, and its current manifestations, its role and utilization across the higher education landscape, and its challenges and value in higher education. Finally, I discuss persistence as a construct and behavior and review rates of persistence and theories of academic persistence across higher education populations. I conclude by examining the limited research focused on persistence among nontraditional undergraduates in nontraditionally delivered courses.

Nontraditional Students in Higher Education

The American view of undergraduate students consists of a recent high school graduate who proceeds directly to college, may work part time during the academic year, and is financially reliant on his or her parents (Choy, 2002). Although students remain who exemplify this stereotype, they have become the minority in postsecondary education.

The following data demonstrate how reality is quite different from our perceptions. The NCES reported in 2001 that only 27% of undergraduates in

postsecondary institutions conformed to the traditional description of undergraduates completely, leaving nearly three-quarters of undergraduates in some respect nontraditional (U.S. Department of Education, 2002b). In 2011, degree-granting institutions reported that students with at least one nontraditional characteristic (age 25+) totaled 8.8 million or 42% of enrollment; since 1980, nontraditional students have represented a similar proportion in colleges and universities. After 30 years, being nontraditional is typical in higher education.

Among undergraduates aged 25 years and older, 63% attend 4-year institutions. Within this group, 47% attend public colleges or universities, and 30% attend private, nonprofit institutions. Again, the data suggest that reality is different from public perception, which has often assumed that this population is found mostly in community colleges and for-profit institutions.

Definition and Description: Qualities of Nontraditional Students

Demographics

Researchers typically include age in describing nontraditional students, and most delimit the population beginning at 25 years old (Choy, 2002; Milheim, 2005; NCES, 2013; Ross-Gordon, 2011). In 2011, 8.8 million undergraduates were aged 25 years or older, representing 42% of the total. Among undergraduates aged 25 years or older, the largest group is aged 35 years and older, at 3.7 million (42%), followed by those aged between 25 and 29 years, at 3.3 million (37%). Growth projections from NCES (2013) indicate an overall growth for undergraduates aged 25 years and older between 2011 and 2021 of 1.2 million, or 44% of all growth anticipated.

In 2011, the NCES ("Condition of Education," 2011) reported that over 60% of nontraditional undergraduate students were women; by 2021, their proportion is projected to grow another 2.7 percentage points to 63.7%, representing 84% of the overall growth of nontraditional undergraduates. In contrast, undergraduates of a traditional age, those aged up to and including 24 years, are more evenly divided between men and women. In 2011, women composed 54% and men 46% of the undergraduate population; 2021 projections result in a similar balance between the genders.

Racial/ethnic minorities are a greater proportion of nontraditional students than traditional students: 23% versus 18% (NCES, 2013).

Other Qualities

Milheim (2005) and Soares (2013) presented a multifaceted picture of nontraditional students: working adults with significant life responsibilities that include careers, children, and other family members. According to these authors, their numbers have been on the rise since the 1970s, and nontraditional or posttraditional students now comprise the majority of college enrollments. Jepsen and Montgomery (2012) and Ross-Gordon (2011) added to the description of nontraditional higher education students: employees who study, part-time students, and those who are independent of family support. Finally, Buglione (2012) included those of low income, those with first-generation status, and immigrants among nontraditional students.

Table 2 shows how nontraditional learners in higher education are a diverse group with many characteristics. The majority of these studies include age, employment status, and having dependents as characteristics defining and describing nontraditional students.

Table 2: Characteristics of nontraditional learners as identified by selected authors/studies

Characteristic[a]	NCES	Choy/NCES	Soares/ACE	Milheim	Ross-Gordon	Buglione
Adult/aged ≥25 years			X	X	X	X
Delayed enrollment	X	X				X
Part-time student	X	X				X
Full-time employee	X	X	X	X	X	X
Financially independent	X	X				X
Has dependents	X	X	X	X	X	X
Single parent	X	X				X
No HS diploma	X	X				X
Low income			X			X
Commuters			X			X
Immigrant						X
First generation						X
Under-represented racial minority						X

Note. Data are from NCES (2013), Choy (2002), Soares (2013), Milheim (2005), Ross-Gordon (2011), and Buglione (2012). HS = high school.

[a]Students with any of the following can be considered nontraditional.

The lack of a common definition of the nontraditional student led Choy (2002), studying nontraditional status and persistence in postsecondary education, to focus on

seven characteristics of these students based on enrollment patterns, financial and family situation, and high school graduation status. The study went further and suggested a continuum of nontraditional status based on the number of these qualities a given student possessed. A *minimally nontraditional* student has only one characteristic, whereas two or three characteristics describe *moderately nontraditional*, and *highly nontraditional* students have four or more. The most common quality among minimally nontraditional students was either older than typical or part-time enrollment; most moderately nontraditional students shared these qualities and were financially independent. These same qualities were found among most highly nontraditional students, who also had dependents, worked full time, and/or were single parents.

Nontraditional Student Participation in Higher Education

According to Choy (2002), Stokes (2006), and Soares (2013), nontraditional students make up the majority of students in higher education in the United States. Traditional students (i.e., those who are aged 18–22 years, recent high school graduates, living on campus, and attending a 4-year institution) made up approximately 15% of all students in higher education and, importantly, are declining in proportion (Soares, 2013; Stokes, 2006). In contrast, nontraditional students represent 85% of students seeking some type of higher education through various institutions and organizations, and their numbers are growing. Within the undergraduate population, nearly three out of four students are nontraditional (Choy, 2002).

In 2011, the total student population in degree-granting institutions of higher education was 20.9 million (NCES, 2013); based only on age, nontraditional students (aged 25 years or older) represented 42%, or 8.9 million. The NCES (2013) projected that

by 2021, the number of students aged 25 years or older attending degree-granting institutions will grow at a faster pace than the number of students aged younger than 25 years, increasing by 1.2 million, and will represent 43% of total enrollment in these institutions. Interestingly, the highest projected growth rate (20%) is among students aged 35 years or older, representing 63% of the total growth projected for all students aged 25 years or older and 28% of growth for all undergraduate enrollment between 2011 and 2021 (Table 3). In the 2013 *Digest of Education Statistics* (Snyder, 2014), the NCES data are consistent with and support these same trends.

Table 3: Undergraduate enrollment by age group: 2011, 2021 projection, and growth

Age group (years)	2011 (MM)	2021 projection (MM)	Growth (%)
Up to 24 (traditional)	12.1	13.6	13
25–29	3.3	3.5	7
30–34	1.8	2.0	13
≥35	3.7	4.5	20
Total	20.9	23.7	13

Note. Data are from NCES (2013).

According to Soares (2013), undergraduate students who are parents totaled 3.9 million, making up nearly 25% of the postsecondary population. The same study showed that 4 in 10 undergraduates were part-time students. Perhaps related to these students' enrollment status is their work status: Almost half work part time, whereas more than one-third are full-time employees. Importantly, the National Postsecondary Student Aid

Study revealed that the overwhelming majority of undergraduates state that they cannot pay for their education without working (Soares, 2013).

Role of the Federal Government

The Higher Education Act of 1965 and its subsequent reauthorizations established financial, programmatic, and policy roles for the federal government in higher education that continue to this day. The federal government plays a critical role in overseeing higher education through the regional accrediting organizations that ensure program integrity and quality, including those for nontraditional students and for course content delivered nontraditionally.

Direct federal government support of nontraditional students in higher education focuses primarily on loans but also includes Pell Grants. Recipients of Pell Grants are increasingly older, at an average age of 26 years, and, thus, nontraditional (Soares, 2013). At the same time, federal government support of nontraditional students has increasingly shifted toward loans (Hearn & Holdsworth, 2004; Heller & Rogers, 2006). Since the 1990s, loan volume has increased 125%, whereas grant aid has increased 55%.

Pattern of Attendance: Level/Type of Institution

The most recent attendance status data from the NCES (2013) revealed the following about undergraduates aged 25 years or older:

- Over 70% are in public institutions; of those, over two-thirds are in 2-year colleges.
- Nearly 19% are enrolled in private, for-profit schools; of those, four out of five attend 4-year institutions.

- Just over 10% are enrolled in private, nonprofit colleges or universities with nearly all in 4-year institutions.

Two analyses by the NCES (Choy, 2002; Horn & Carroll, 1996) probed further, applying the minimally, moderately, and highly nontraditional lenses to provide insight into the levels and types of institutions nontraditional students attend. Confirmed by the 2013 NCES data referenced earlier, Choy's (2002) study showed that nontraditional student enrollment patterns differed from the enrollment patterns of their traditional counterparts, with significantly higher enrollment in public 2-year institutions. Horn and Carroll's (1996) study, covering 1986–1992, looked at enrollment trends of this population and found growth in enrollments at 4-year institutions. Minimally nontraditional students were concentrated in public 4-year institutions, which also saw the greatest change over the study period. Enrollment of moderately nontraditional students grew across all levels and types of institutions over the study period. Enrollment of highly nontraditional students were more or less stable among all levels of institutions and types of control over the study period; the exception was private, not-for-profit, less than four -year institutions which grew by 8.9 percentage points.

Intentions of Nontraditional Students in Higher Education

Adults learn in order to do; they are purposeful in their approach, the need for learning typically arising from a problem or challenge in life (Knowles, 1989; Kolb, 1984). Importantly, adults learn on a largely voluntary basis, not because they are compelled to do so, as is often the case with children and adolescents. Consistent with the independent nature of adult learning, it is self-directed, often grows out of life events and

experience, and is as likely to be informal as it is to be formal in format or structure (Merriam, Caffarella, & Baumgartner, 2007; Mezirow, 1991).

The goals of nontraditional students are as unique as each individual student, including career development, personal interest, interacting and networking, and completion of a degree begun earlier; however, the common purposes reported center on employment: to maintain, advance, or change careers (Berker, Horn, & Carroll, 2003; Stokes, 2006). Eduventures reported in 2008 that improving performance or pay in one's current job or field was the primary motivation of nearly one-third of adult learners; another 33% of respondents in the Eduventures study cited career-related themes as the overriding reason for pursuing additional education.

In light of economic trends and labor market demands, these goals are understandable. Reports from government sources as well as academia have pointed to the growing and intensifying need for postsecondary education among the American workforce (Baum, Ma, & Payea, 2010; Carnevale, Rose, & Ban, 2011; Hagelskamp, Schleifer, & DiStasi, 2013). According to Carnevale, Smith, and Stohl (2010), 63% of all jobs in 2018 will require some postsecondary education, validating the intentions of these students.

Reports from the College Board (Baum, S., Ma, J., & Payea, K.,2010 and 2013) indicated that Americans with education beyond high school have above average income and lower than average unemployment rates as well as better than average health outcomes and civic engagement rates—benefits that accrue to society as well as the individual. Across ethnic and gender lines, the premium for postsecondary education

holds, with the greatest differential experienced by those earning a bachelor's degree or higher.

These data suggest important implications for andragogy, the methods and techniques used to teach adults. The adult learner's purposeful approach invites teaching and learning methods developed and organized to meet their specific needs. This includes (a) content that is relevant, (b) access that is convenient, and (c) design that is engaging and motivating and that leverages the power of technology to enhance learning.

Paucity of Research on Nontraditional Students

In a 2007 study, Donaldson and Townsend reviewed more than 3,000 articles published in seven scholarly journals between 1990 and 2003. The purpose of the review was to determine the extent to which these journals published articles on nontraditional undergraduates. The authors found that a scant 1.3% of articles—41 out of 3,219—met the criteria of their search, and only 33 included empirical studies.

Why Nontraditional Students Matter

The societal impacts of an educated citizenry are significant, with extraordinary economic, social, and cultural consequences for a nation (Baum et al., 2010). With higher levels of education come a more sophisticated and prepared workforce, able to compete globally, with higher rates of employment and income, contributing to societal needs through higher taxes and requiring less support from government sources.

The current rates of college enrollment and completion fall short of the projected job market requirements for workers with postsecondary education (Carnevale et al., 2010). Increasingly, current and near-term future jobs require knowledge and skills gained from higher education.

Nontraditional Delivery in Higher Education

At the ends of the spectrum of course delivery, traditional and online, definitions are more common across educational institutions; however, data to support common definitions of course delivery seeking to optimize the mix of technology and faculty, for example, hybrid or blended, are sparse (McFarland & Hamilton, 2005; Picciano, Seaman, & Allen, 2010).

Definition of Modes of Delivery

Traditional instruction, place bound and teacher-centric, is based on hierarchy and relies heavily on individual evaluation of students. In contrast, distance education, as defined by the NCES in a 2006–2007 study, is a prescribed experience of teaching and learning in which the pupil and teacher are in different locations (Parsad & Lews, 2008).

Allen, I. E., Seaman, J., & Garrett, R. (2007) and Allen and Seaman (2013) provided the following definitions of course delivery methods:

- *Traditional*. No online technology is used; all content is delivered in writing or orally.
- *Web facilitated*. Between 1% and 29% of course content is delivered online, these are largely traditional courses with Web-based technology facilitating learning. For example, materials may be posted on a Web page or in a course management system.
- *Blended/hybrid*. Between 30% and 79% of course content is delivered online. A mix of face-to-face and online delivery is employed, with fewer class meetings and more online discussions for interaction between students and faculty.

- *Online.* At least 80% of course content is delivered online. Normally, there are no class meetings; instruction, interaction, and learning are mostly or entirely conducted online.

A U.S. Department of Education evaluation of online learning studies utilized the following components to frame online learning: (a) whether the online activity serves as a replacement or enhancement of traditional instruction; (b) the type of learning experience utilized by learners to acquire knowledge, for example, expository, active, or interactive; and (c) whether the online learning activity is synchronous or asynchronous (Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K., 2010).

Historical Review

Until the mid-20th century, higher education largely conformed to traditional methods of instruction and interaction: It was teacher led and based on theories of how children learn and develop. Technological advances and new delivery methods spurred distance education in the United States and learning where student and teacher are not co-located. Prior to the mid-20th century, distance education developed based on printing technology, postal service, and broadcast media. More recently, developments in computer hardware and software, as well as networking across the globe, have enabled teaching, interaction, and learning to occur despite the separation of instructor and student.

Although individual states are constitutionally responsible for education at all levels, the federal government has played a major role in shaping American higher education through legislation such as the Northwest Territories Act of 1787, requiring the provision of land for future higher education institutions, and the Morrill Acts of 1862

and 1890, which provided support and maintenance for “land-grant” colleges, including those that were historically Black (Thelin, 2004). The 1944 Servicemen’s Readjustment Act (GI Bill) provided access to veterans returning from World War II, whereas the 1958 National Defense Education Act focused support to improve the teaching of science, math, and modern languages. These and many other acts ensured that an ever-growing number of Americans were able to access an education and a teacher to learn their way to better lives.

The history of higher education in the United States includes domestic initiatives to serve students at a distance from their instructors with influence from abroad. Correspondence courses, introduced in the United States in the mid-19th century, grew out of European industrial society and included Englishman Isaac Pitman’s shorthand instruction and led to American Anna Eliot Ticknor’s Society to Encourage Study at Home, supporting women’s education (Holmberg, 1986; Moore & Kearsley, 2011; Portman, 1978; Verduin & Clark, 1991).

Using print-based materials and the postal service, these one-way technologies largely targeted adult learners and introduced the experience of learning at a distance from the instructor. This new form of education grew out of a convergence of factors influencing society at the time: the printing press and the growing publishing industry, cheap pens, growing literacy in society, and the need created by the Industrial Revolution for an educated workforce (Hamilton, 1990). The Chatauqua movement in the United States was seminal in its influence on distance education as it pioneered correspondence courses for growing immigrant groups in the latter half of the 19th century (Scott, 1999). Colleges and universities joined in the movement of distance education at the turn of the

century; early examples include a course in mine safety offered in 1890 by the Pennsylvania Colliery Engineer School of Mines (Watkinson, 1996) and the University of Chicago offering of the initial college-level correspondence courses in 1892, providing much-needed legitimacy to distance education (Moore & Kearsley, 2011; Pittman, 2003, 2008). More than three dozen universities in the United States were offering print-based correspondence courses to students by the 1930s (Portman, 1978; Schlosser & Anderson, 1994).

By the mid-20th century, additional forms of media, for example, broadcast, audio, and video recordings, supplemented but did not replace print in distance education (Keegan, 1996; Moore & Kearsley, 2011). The Open University of the United Kingdom serves as a model of distance education during the "multimedia" era, as Sumner (2000) and Taylor (2001) have described, contributing to mass education via technology (Holmberg, 1986). These newer forms of technology and the organizations that employed them in distance education remained predominantly one way in how information was shared and learning occurred (Bates, 1993).

The most recent generations of distance education grow out of the computer, the Internet, and Web-based applications that provide the means for enhancing communication between all involved in the learning experience (Menzies, 1996). Distance learning since the 1980s has incorporated these technologies, resulting in increased two-way communication between participants. Today's online learning enables learners to remain engaged over time and space to collaborate and communicate (Randy, 2009).

Two models of distance learning delineate its eras, providing useful means of organizing significant developments over time. Taylor (2001) proposed a taxonomy of distance education beginning with the correspondence model, which utilized print technology, followed by the multimedia model, which leveraged audio and video in addition to print. The third generation of Taylor's taxonomy relies on telecommunications, the telelearning model, and, fourth, the flexible learning model, is based on the Internet. Taylor posits a fifth generation, the intelligent flexible learning model, in which students have greater access to and interaction through Web-based applications.

The second model, developed by Sumner (2000), describes distance education over three generations driven by developments in technology: correspondence, multimedia, and computer mediated. Each subsequent generation's technology enhances participants' communication and understanding, thereby increasing the two-way process of learning.

These models, along with the preceding review of higher education's past and distance education in particular, reveal the multiple foundational factors that contribute to how instruction is delivered today. Students' desire to learn, combined with innovation using the technology of the day, has brought the opportunity to learn across time and space in the United States since the 19th century. Then availability of print media, through the prevailing technologies of the era, e.g., printing presses for publishing, and pens for personal communication, was key to greater access to higher education. Furthermore, societal changes, including immigration and industrialization, increased the need for better educated workers. Although some of the particulars may be different,

technology and social change continue to push higher education toward more and better means of providing students with opportunities to learn.

Recent Developments in Distance Education

Online Delivery

The foundation of online course delivery in higher education was set in the 1970s with microprocessors and personal computers, which provide a stand-alone tool for learners (Moore & Kearsley, 2011). The combination of computers and telecommunications enabled the development of local area networks and, ultimately, the World Wide Web, providing the connectivity needed to make online learning an interactive experience. According to Thelin (2004), online instruction has mushroomed since the 1990s, as financial aid became available to students taking courses through virtual and traditional campus-based institutions. Now pervasive in higher education, as in the rest of society, the Internet and social media appear to be disruptive changes transforming institutions and the experience of learning (Garrison & Kanuka, 2004). Access, flexibility, and active and engaged learning are the resulting promise of online courses for students; the potential for greater effectiveness and efficiency is the hope of institutions.

Online Course Capabilities

Simonson, Schlosser, and Orellana (2011) wrote, “It is not different education, it is distance education” (p. 1), as they describe its impact on the educational landscape in recent decades. Their literature analysis found support for the efficacy of distance education while recognizing that each type of technology had strengths and weaknesses in the overall experience of learning.

Employing a systems approach is useful in understanding the organization, options, and benefits of online courses (Moore & Kearsley, 2011). Online learning at its best begins with desired outcomes and recognition of the target audience needs and leverages technology to develop and deliver appropriate content and meaningful experience. Studies of best practices over the 40 years of online learning's history show that integrating the expertise of a subject matter expert, instructional designer, and media specialist brings together the best of each to create an experience that is on par with, albeit different from, traditional learning environments (Taylor, 2001).

Online courses enable institutions to move beyond the boundaries of a physical location to reach and serve students (Harrington, Gordon, & Schibik, 2004). The development of course management systems, for example, Blackboard or Moodle, has added other capabilities to online courses to increase ease and enhance interaction between instructor and student as well as between students (Harrington et al., 2004). Course management systems supplement a traditional educational experience, organize a course, and offer access to students and faculty from virtually any location (Harrington et al., 2004; Simonson, 2007). Computer-adaptive learning adds levels of personalization to online learning, thus contributing to institutions' and instructors' goal to provide individualized and just-in-time instruction (Tseng, Chu, Hwang, & Tsai, 2008).

Hybrid Delivery

In 2002, the president of Pennsylvania State University declared that "the single greatest unrecognized trend in higher education today" (Young, 2002, p. A33) was the union of online technology and the classroom. Since that time, the blending of face-to-face learning and asynchronous online technology has enabled students and teachers to be

virtually together and physically apart, intentionally convening in person to maximize the educational experience (Garrison & Kanuka, 2004). Hybrid or blended courses, according to Garrison (2004), succeed when both classroom- and Internet-based learning are fully leveraged for the benefit of the student; the optimal balance between these two can vary by student needs, discipline, or resources, among many variables. The goal is the highest quality and quantity of interaction leading to effective engagement through an efficient combination of both means of educational delivery. Hybrid courses offer collaboration, discussion, and deliberation between individuals that are free and open, resulting in critical discourse and reflective thinking, which are the hallmarks of higher education in whatever delivery format.

Students in hybrid courses are able to develop thoughtful and reasoned positions when engaging with asynchronous tools on the Internet and in more immediate give-and-take in a classroom environment (Garrison & Kanuka, 2004). The combination of both learning environments provides the opportunity to develop skills of exploration, integration, and application (Garrison, 2011). According to Cohen and Kisker (2010), distance education has been shaped for the last quarter-century through technology and online instruction.

MOOCs

A massively open online course (MOOC), according to McAuley, Stewart, Siemens, and Cormier (2010),

> integrates the connectivity of social networking, the facilitation of an acknowledged expert in a field of study, and a collection of freely accessible online resources. . . . [It] builds on the active engagement of several hundred to several thousand "students" who self-organize their participation according to learning goals, prior knowledge and skills, and common interests . . . generally

> carries no fees, no prerequisites other than Internet access and interest, no predefined expectations for participation, and no formal accreditation. (p. 4)

As such, the MOOC attempts to go beyond content and technology to leverage interaction and engagement of learners at vastly different levels of knowledge and interest with a recognized authority in the subject to be studied at little or no financial cost to the participant.

Since 2011, for-profit entities such as Coursera, KnowLabs, and Udacity.com have emerged with varying business models all designed to leverage the power and appeal of MOOCs. Organizations specializing in MOOCs have not undertaken this level of offering, choosing to differentiate themselves on other factors, such as institutional affiliation, access, and low or no cost. As a result, online and hybrid courses remain the means by which most students, including nontraditional undergraduates, leverage technology to achieve their academic and learning goals, which include a degree or some other credential.

Why Nontraditional Delivery Developed

Higher education in the United States has served dual purposes throughout its history. By educating individuals, supporting their personal and professional goals, the larger society is benefited (Baum et al., 2010). Individuals who are appropriately employed and able to pursue career advancement contribute to their communities in myriad ways, economically, culturally, and politically. Furthermore, those same individuals tend to use fewer of their communities' resources, for example, health care, government services, and support.

The priorities and purposes of higher education are the subject of continued debate in the United States. Political and business leaders often focus on lowering costs

and the job prospects of graduates. Academic leaders argue that a range of disciplines is required for personal fulfillment and for the need for a democratic society of educated citizens. Both groups appear to agree that more Americans need education beyond K–12 for a variety of reasons.

Nontraditional, technology-enabled or -supported approaches offer the prospect of greater efficiency of instructional delivery and enhanced effectiveness of student learning and outcomes, which may satisfy most groups interested in the future of higher education. Table 4 illustrates the variety of modalities and which types of institutions have offer them. It is important to note this was an initial characterization of recent developments in nontraditional approaches; subsequently, experimentation by many 2-year and 4-year institutions have not fully developed, leaving the future of some approaches to be determined.

Table 4: Types of institutions/organizations and nontraditional approaches offered to undergraduates

Nontraditional approach	2-year, public	4-year, public traditional	4-year, private traditional	For-profit/ proprietary	Other HE[a]	Corp.
Distance	X	X	X	X	X	X
Online	X	X	X	X	X	X
Hybrid	X	X	X	X		
PLA/competency	X	X		X	X	
Accelerated	X			X	X	
MOOC			X			

Note. Data are from class materials, UNCC, ADMN 8000-091, Mabe (Spring 2013). HE = higher education institution. MOOC = massively open online course.

[a]For example, Saylor, WGU.

Role of the Federal Government

Higher education in the United States is funded and directed at the local and state levels, leaving the federal government with limited but strategic means of influencing its development; online education is no different. Policy, accreditation, and infrastructure are the primary methods by which federal government leadership has been exerted in the development of higher education (General Accounting Office, 2002; Mayadas, Bourne, & Bacsich, 2009).

Who It Serves: Utilization of Nontraditional Delivery

According to the NCES (Parsad & Lews, 2008), undergraduate enrollments in college-level, credit granting distance education courses in Title IV degree-granting postsecondary institutions totaled 9.8 million in 2006–2007. Enrollments were evenly split between 2-year and 4-year institutions.

The U.S. Department of Education reported in 2011 that 20% of all undergraduates enrolled in a distance education course, more than doubling since 2000, as did enrollment in degree programs that were exclusively offered via distance education (Radford, 2011). Among undergraduates taking distance education courses, nontraditional students participate at a higher than average rate: nearly one-third of those aged 30 years and older and more than one-quarter of those aged 24–29 years. Similarly, students in the older age groups enroll in online degree programs at a much higher percentage than do those aged younger than 23 years.

Intensity of enrollment rates in distance education also differ by marital status, dependents, and employment. Undergraduates who are married, have at least one

dependent, and are employed full time are overrepresented in both course taking and degree programs that are offered via online and hybrid course delivery methods.

The National Household Education Survey, including adult participation in education, reported that 43% of adults 25 years of age and older participate in formal educational activities, including work-related and personal interest courses, and college degree programs (O'Donnell, 2006); 31% of adults participating in education, 25.3 million, participate in any form of distance education. According to a 2000 study by the NCES (as cited in Choy, 2002), moderately nontraditional (two or three nontraditional characteristics) and highly nontraditional (four or more nontraditional characteristics) student participation in some form of distance learning was 22.4 percentage points higher than other undergraduate students.

A more recent study by the NCES in 2010 revealed that at least one-quarter of undergraduates aged 24 years and older took *at least one* distance education course; in contrast, fewer than one in five traditionally age undergraduates took any courses taught through distance education. Similar results were found among undergraduates whose entire program was through distance education. Undergraduates with other characteristics identified with nontraditional status pursued their studies via distance education at a higher percentage than their traditional counterparts. For example, the rate of independent students taking any distance courses was nearly double that of dependent students. See Table 5.

More recent developments in delivery and access, largely fueled by technology, likely contribute to even higher levels of participation in nontraditional approaches to higher education by nontraditional students than the statistics reported here.

Table 5: Undergraduate participation in distance education, 2007–2008

	Distance education participation (%)	
	Course(s) taken	Entire program
Dependency status		
Dependent	14.3	1.0
Independent	27.3	6.7
Age as of December 31, 2007 (years)		
≤18	10.4	1.0
19–23	16.1	1.4
24–29	25.9	5.3
30–39	30.6	9.1
≥40	29.4	7.7
Work intensity while enrolled		
Did not work	15.6	2.6
Part time	17.8	1.9
Full time[a]	27.7	6.9
Parents' education		
Bachelor's degree or higher	18.7	2.8
Some postsecondary education	21.9	3.8
High school diploma or less	21.5	4.6

[a]≥35 hours per week.

Given the multiple roles and responsibilities of nontraditional students, it is not surprising that they seek flexibility and customization when considering their options for

pursuing higher education (Ross-Gordon, 2011). As a result, nontraditional students are consumers of nontraditional approaches to higher education.

Challenges of Online and Hybrid Delivery in Higher Education

A perpetual challenge to higher education is utilizing the vast capabilities of online learning (Randy, 2009). Rapidly changing technology is both a boon and a test to the development and implementation of online and hybrid delivery in higher education. Integrating sound educational practices and new means of learning and instruction requires faculty and administration to remain current and to be creative in their approach. Developing and sustaining the infrastructure and knowledge required to remain current is a never-ending requirement of colleges and universities.

Predicted savings in costs for institutions and increases in productivity by faculty and staff have not been borne out in reality (Allen & Seaman, 2013; Thelin, 2004). Allen and Seaman (2013) reported that 44.6% of surveyed academic leaders believe it takes more faculty time to develop and deliver online courses than face-to-face courses require; those from public and private nonprofit institutions agree at higher rates of 55.2% and 45.3%, respectively. However, leaders at for-profit institutions see things differently: Only 24.2 % believe time and resource demands are greater for online courses, down 7.4 percentage points since 2006.

The validity of online and hybrid instruction remains a question in the minds of some as accreditation issues persist for institutions that are wholly or largely online (Thelin, 2004). Traditional accreditation has relied on library holdings, laboratory facilities, and other tangible evidence of an institution's capability and offerings to students. Other criteria are required to accurately assess the soundness of online

institutions: technical support, course development processes, and student–faculty interaction.

The autonomy of the learner in online learning remains a challenge to both the student and the institution. Requiring a higher level of agency, that is, motivation and self-regulation, online learning puts greater responsibility for success and advancement on the learner. The physical separation created in online learning eliminates much of the responsibility and control institutions have traditionally enjoyed over the process of learning.

Value of Nontraditional Delivery in Higher Education

Christensen, Horn, Caldera, and Soares (2011) have pointed to the disruptive qualities of technology in higher education and the benefits of access and affordability, as well as cost savings that appear to accrue as a result. However, their point of view is institutional and not driven by the student/consumer. Drucker (1985) acknowledged multiple sources of innovation, both internal and external to organizations, but emphasized the importance of understanding and serving the customer. Keeping the customers' needs uppermost in mind is critical to the success of any innovation that higher education pursues.

Combining the needs of nontraditional students for flexibility and different forms of access with the capabilities of nontraditional, technology-supported delivery is a critical step in aligning institutions' approach to these students. Beyond distance modalities, such as online and hybrid, institutions that understand and effectively utilize prior learning and competency-based assessments are likely to attract nontraditional learners; formal recognition of experience and learning in noneducational settings allows

the nontraditional learner to expedite the process toward formal credentialing (e.g., certification or degree). Accelerated learning formats that allow learners to move at their own pace through content and demonstration of mastery are another example of how colleges and universities can meet nontraditional students where they are in formats that provide real value to them. MOOCs are a recent development in higher education that appears to offer some benefit to nontraditional students; however, in their current manifestation, they offer little value, if any, toward earning a formal credential. As a result, their place in the nontraditional pantheon of approaches and how MOOCs would work for higher education to better serve nontraditional students remain unclear at this time.

Drucker (1985) suggested that innovation is the result of knowing more than doing. Organizations that conduct consistent, disciplined analysis to identify potential opportunity have a greater likelihood of sustainable, meaningful change in their own futures as well as in their industries. According to Drucker, knowledge and technology are important sources of opportunity to innovate. However, more important are demographic changes and consumer behavior, which lead to incongruities in production and distribution. The author wrote that demographic trends are among the "most rewarding and least risky of entrepreneurial pursuits" (p. 70).

Although the majority of higher education institutions are not for profit, they are, nonetheless, faced with challenges that require innovation. Economic realities, workplace demands, and demographic changes in the population of the United States provide higher education with the opportunity to innovate with greater confidence of success. Higher education institutions can leverage understanding of both the quantity and quality of the

market to develop programs, delivery methods, and learning outcomes that focus on the needs of the nontraditional student. Not only the numbers of people but age, sex, geography, occupation, and past educational experience are important variables to understand as higher education seeks to engage and better serve nontraditional students.

Persistence of Nontraditional Students in Higher Education

As noted earlier, progress toward higher education and degree completion has many departure points. Wendler et al. (2012) reported that of every 100 students entering high school, 75 graduate, and of those, 43.5 enter college. The prospects for those going on to college are not much better: Of those 43.5 students entering college, only 26.1 will graduate. Reporting on a specific cohort of beginning postsecondary students (2004–2009), the NCES reported a six-year attainment rate of 31% for bachelor's degrees among students of any age; the attainment rate among students aged 24-29 years old of 5.5% and 30 years and older was 4.5% (Skomsvold, 2011).

Nontraditional student persistence offers specific insight into this population. Brown (2002), citing a 1995 NCES study, found that persistence rates beyond the first year among nontraditional students were one-third less than among traditional students, at 62% and 94%, respectively. Among bachelor's degree–seeking students, Choy (2002) found that after 3 years, nearly 9 out of 10 traditionally aged students continued, whereas only half of nontraditional students were still enrolled in undergraduate studies, revealing a gap of 38 percentage points. In the same study, Choy reported that after 5 years, the gap narrowed between the two groups to 22.6 percentage points. More recent studies (Calcagno et al., 2006; Cavote, 2007; Nakajima et al., 2012) have found similar results: Nontraditional students are less likely to persist than their traditional counterparts are.

Theories of Academic Persistence

Scholars studying academic persistence among college students use constructs from various orientations, including sociological, psychological, and economic, to develop theories that explain how and why some individuals continue to completion and others do not. Early studies, and the majority of all studies of persistence have focused on traditional students (Pascarella & Terenzini, 1980; Spady, 1970). As such, these studies have taken a sociological perspective, focusing on social and academic integration of students in a traditional college setting, for example, residential, and recent high school graduates. Social networks, which increase student engagement, play an important role in student persistence (Berger & Milem, 1999).

Tinto, focusing on traditional college students in residential, 4-year collegiate environments, developed the student integration model, which has informed much of the research and scholarship in this area over the last three decades (Tinto, 1975, 1987, 2002). Tinto posited that persistence is based on dual commitments made by the student, largely influenced by background characteristics of the individual: (a) goal commitment to attain a degree and (b) institutional commitment (to obtain the degree at a particular institution). Persistence in Tinto's student integration model relies heavily on a successful match between the student's motivation and academic ability with a given institution's ability to meet his or her expectations. As a sociological or interactionalist model, Tinto's theory is insufficient to explain the persistence of nontraditional students, who approach higher education quite differently from their traditional classmates.

Researching the persistence of adult undergraduates, Bean and Metzner (1985, 1987) developed the student attrition model, identifying the significance of

"environmental press" (Bean & Metzner, 1985, p. 489) in these students' decisions to persist. Focusing on older, commuter, part-time students, Bean and Metzner saw less intensity and length of interactions with faculty and peers as a hallmark of nontraditional students. Because of obligations outside of academe, nontraditional students tend not to integrate into the social environment of institutions as fully as their traditional counterparts do; higher education is a pragmatic choice for nontraditional students, whose focus is on the utility of academic offerings. The student attrition model suggests that a student's intention to persist is affected by a combination of individual characteristics and background as well as ongoing intuitional and external variables that surround the student.

Given the complexity of persistence, models that employ multiple constructs provide an improved understanding of this decision (St. John, Cabrera, Nora, & Asker, 2000). In addition to social and psychological models of academic persistence, economic models have been developed based on cost–benefit or rational choice models, often integrating financial circumstances with environmental variables, social support, academic experiences, and the student's perception of his or her likelihood to complete a program (Dowd & Coury, 2006).

Cabrera et al. (1993) tested both the student integration model (Tinto) and the student attrition model (Bean & Metzner, 1985), finding that the relationships between individual, institutional, and environmental factors are important in understanding persistence. Because previous testing of the Tinto and Bean and Metzner models only included traditionally aged undergraduates, Cabrera et al. (1993) also focused on this same population and did not include nontraditional students.

Attewell et al. (2011) analyzed contending theories of undergraduate achievement and attrition utilizing the 1996–2001 panel of the Beginning Postsecondary Students Longitudinal Study. The study included students from 2- and 4-year institutions and compared multiple variables to determine relative effect sizes of major predictors (sheaf coefficient). The results from this study do not support a single theory of noncompletion but rather suggest that certain factors are more significant by type of institution: (a) Financial aid has a positive and statistically significant relationship to graduation among students entering 2-year colleges and (b) academic preparation is a strong factor positively associated with gradation among 4-year college students. Furthermore, their findings reveal that nontraditional student status (delayed entry, part time, or independent) is a significant predictor of noncompletion in three out of four institutional contexts: 2-year colleges and least selective and moderately selective 4-year colleges; it was not a predictor in the fourth—highly selective 4-year colleges.

Falcone (2011) proposed a multitheoretical model, based on a review of prior scholarship, for explaining persistence outcomes for some nontraditional student populations. Building on Tinto's (1993) student integration model and Rendon's (1994, 2002) theory of validation, and utilizing Bourdieu's (1977) framework of social capital, Falcone's (2011) model incorporates the constructs of agency and structure to demonstrate the intricacy of interactions that influence student persistence decisions. More complex than previous theories of persistence, Falcone's model offers flexibility and relevance that aid in understanding persistence outcomes for nontraditional students. See Figure 1.

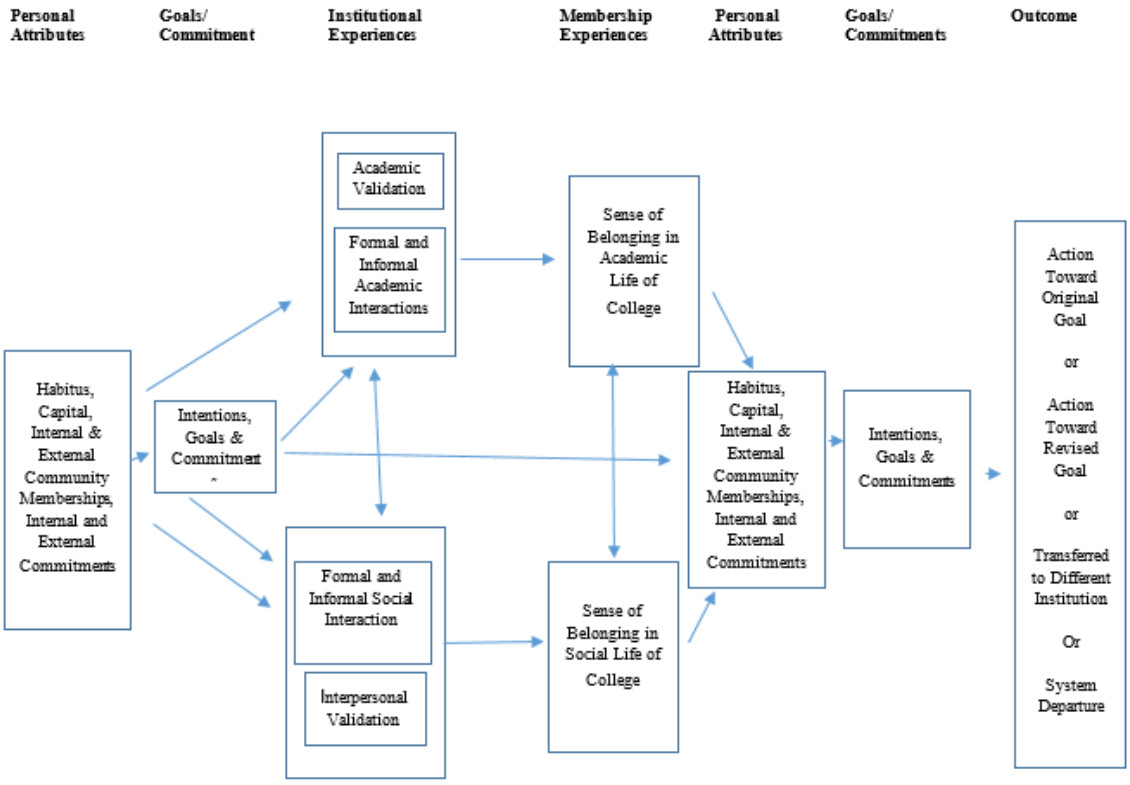

Figure 1: Adaptation of Falcone's model of student persistence in higher education.

Persistence of Nontraditional Undergraduates in Online and Hybrid Courses

The models discussed in the previous section were developed largely based on students in campus-based or commuter situations and tested with students whose academic experience reflected a traditional approach to course delivery: face-to-face contact with faculty and fellow students and conducted in a classroom. Other models, however, of nontraditional student persistence in nontraditional instructional settings have been developed to understand the factors influencing student attrition or persistence decisions in distance education, including online courses.

Kember, Lai, Murphy, Siaw, and Yuen (1994) developed a model of persistence focusing on distance education students who were primarily adults with work and

personal obligations, pursuing higher education on a part-time basis. In a replication study, using factor analysis and path analysis to evaluate the model, Kember, Lai, Murphy, Siaw, and Yuen (1994) found that 78% of the total variance was explained by the complex interaction of multiple factors influencing social and academic integration. Kember's research showed that adult student persistence in distance education courses is not explained by entry or background characteristics, although these may influence students' ability to integrate academically and socially. Instead, Kember's study indicated that intervening variables, such as academic accommodation or incompatibility, emotional encouragement, external attribution, and grade point average (GPA), are important to student progress in distance education.

Levy (2007) studied dropouts and persisters in online courses, focusing on academic locus of control, student satisfaction, and student demographics factors to explain the difference in outcomes. In this study, student satisfaction was the major factor correlated to persistence and attrition, with a Pearson's correlation of .282. Satisfaction level was indicated by students' perceived ease of use of the technology, perceived effectiveness of the learning experience, positive perception of group online activities, and willingness to take another online course. A study of online students at the University of Central Florida found that student attrition from online courses, ranging between 5% and 8% over a six-term period, was due to factors other than instructional or delivery method (Moskal, Dziuban, Upchurch, Hartman, & Truman, 2006). Among persisters, high levels of satisfaction due to convenience and flexibility were reported and appear to have contributed to students' continuing and completing courses.

Pontes and Pontes (2012b) tested data from the 2008 National Postsecondary Aid Survey, finding that enrollment in distance education negatively correlated with likelihood of an enrollment gap as compared to exclusive face-to-face enrollment among nontraditional students. In other words, students enrolled in distance education were less likely to have an enrollment gap in their careers.

Ruot (2013) researched persistence during a 6-year period (2003–2004 and 2008–2009) among independent students and students beginning at community colleges. Using the NCES's Beginning Postsecondary Students (BPS) longitudinal study, 2004–2009, logistical regression was used to identify factors influencing completion, transfer, and attrition. Ruot's study found that receipt of Pell Grant funding and level of academic integration were the factors most positively associated with nontraditional students' persistence, as were higher first-year GPAs, taking remedial course work, and stopping out for one or more semesters. Given that the majority of factors positively associated with persistence among these students were enrollment and not life circumstance variables, Rout concluded that institutional policies and practices have the ability to impact nontraditional student success.

Shea and Bidjerano (2014), also using BPS 04/09, examined the association between course delivery method and completion of degree among community college students, with a particular interest in the institutional response to student needs. Their results reveal a higher chance of credential attainment among those enrolled in online and distance education courses (14% in 4 years) during their first year as compared to those in traditional or face-to-face courses (9% in 4 years). The authors followed two previous studies by Jaggars and Xu (2010) and Xu and Jaggars (2011) that examined the issue at

the state level, finding that online course taking is not associated with credential attainment among community college students. Shea and Bidjerano (2014) noted that earlier models of student persistence do not specifically include "forms of institutional response to students, for example, the provision of online learning environments in higher education" (p. 104) and used their study to suggest that college participation and completion may be influenced by the institutional changes that technology has introduced. Going further, the authors argued that the "unexamined assumption" (p. 104) in the higher education environment is that all adaptation occurs at the individual student level, failing to recognize that adaptation can and does occur at the institutional level. The study provided support for the authors' assertion that technology has enabled and increased the "transactional adaptation" (p. 105) on the part of the institution as well as the student. Based on their empirical findings, the authors suggested a modification to Falcone's (2011) model of student persistence, incorporating institutional adaptation as an important factor in student persistence. Shea and Bidjerano's (2014) study specifically focused on online learning as a form of institutional adaptation, finding that it supported credential attainment among nontraditional students. See Figure 2.

Chapter Summary

Research exists on nontraditional undergraduates (varying definitions), nontraditional instructional methods/delivery, and persistence among college students; however, most research does not combine these constructs in the way this dissertation

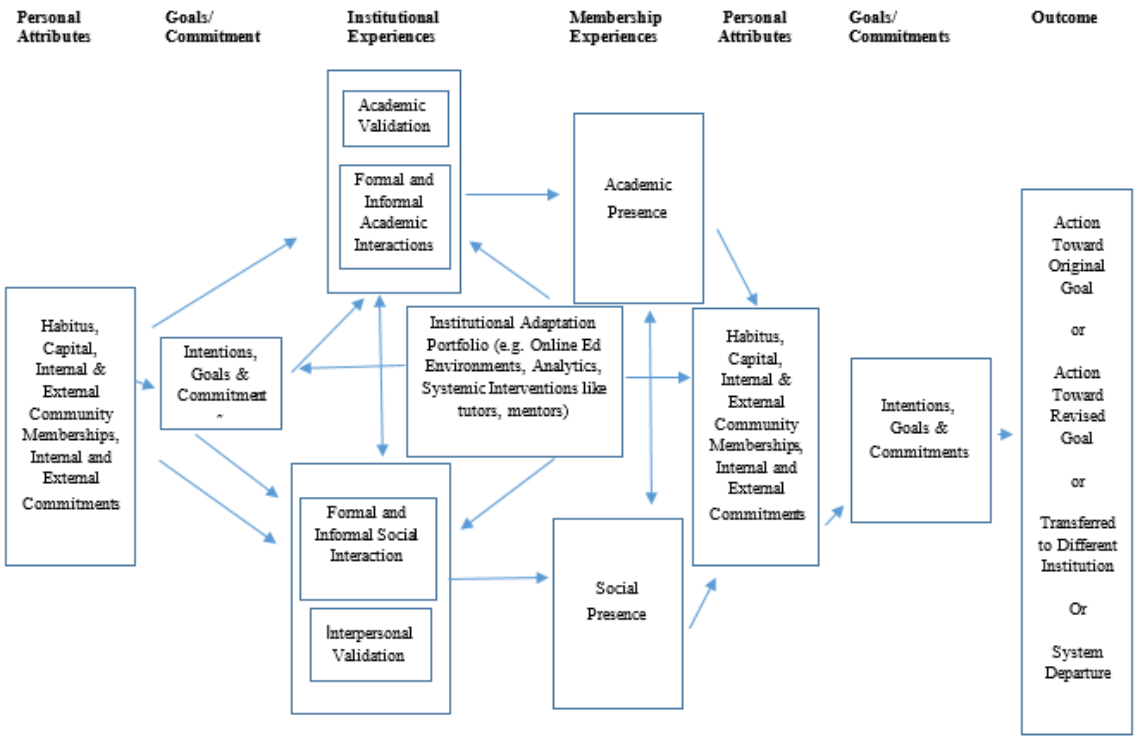

Figure 2: Adaptation of Shea and Bidjerano's (2014) model of student persistence in higher education, including dimensions of technology-enabled institutional adaptation.

does. This study examines the association between course delivery method, an institutionally controlled factor, and nontraditional student persistence outcomes, utilizing both quantitative and qualitative data from multiple institutions. Furthermore, prior studies have not typically included the institutional perspective in exploring the challenge of persistence.

There is an abundance of data on the size and growth of the nontraditional undergraduate population, verifying the importance of this student group to higher education. Persistence research over the past four decades, growing out of Tinto's student integration model, has been productive in identifying and understanding factors important to traditional, residential undergraduates; however, fewer studies have focused on

nontraditional student persistence. Importantly, the limited persistence research on nontraditional undergraduates emanates from a deficit orientation, focusing on factors that negatively influence their chances of persistence, finding them inadequate and insufficient when compared with traditionally aged college students.

Studies focused on online and hybrid course delivery have largely focused on comparing their effectiveness with traditional instruction, finding online and hybrid to be comparable and, in some regards, more beneficial to students. Other studies of course delivery method have concentrated on measuring the student learning outcomes or explaining student persistence and attrition from distance education online programs. Research comparing the effect of course delivery type on nontraditional student persistence is scarce.

Relatively little research has been done to understand nontraditional students' persistence and the factors that influence it (Bailey, 2005; Donaldson & Townsend, 2007). Since the 1970s, the population of students aged 25 years and older has risen nearly 300%, totaling 6.5 million in 2011 and representing 42.3% of enrollment ("Condition of Education," 2011). In contrast, Donaldson and Townsend (2007) reviewed seven scholarly journals over a 13-year period, finding only 41 out of 3,219 articles focused on adult or nontraditional students; of these, only 15 articles, or 0.46%, addressed student retention or academic success of adult students.

Persistence among nontraditional undergraduates is affected by myriad other/additional factors at the individual, institutional, and environmental levels. These include those identified as part of the "environmental press" in Bean and Metzner's (1985) student attrition model, background or life circumstance variables, enrollment

behaviors, academic and social integration, and cost–benefit or rational choice (Attewell et al., 2011; Bean & Metzner, 1985; Cabrera et al., 1992; Cabrera et al., 1993; Metzner, 1987; Ruot, 2013; St. John et al., 2000).

Understanding individual and environmental factors that support or detract from nontraditional students' ability to persist in pursuit of their educational goals is critical to institutions serving those students and to the institutions' leadership. Colleges and universities have been able to make accommodations in student services and other nonacademic programming to better assist nontraditional undergraduates. These initiatives largely focus on factors outside the direct control of colleges and universities and have had limited impact on students' persistence to degree completion, as evidenced by the sustained low rates of graduation among this population. Research into the issue of nontraditional student persistence examining key factors in the equation that are within a given institution's direct control—what is taught, how, and when—is limited and represents a gap in the research, which affects both institutions and individual students.

Key parts of this research project are drawn from recent findings regarding the persistence of nontraditional students. Including administrator interviews and published documents reflects the idea that institutions control factors that may affect persistence. Technology, done well, apparently affects the satisfaction of nontraditional students. Academic accommodation and GPA are factors identified by previous research, as is the role of Pell Grants. By focusing on delivery methods, the role of institutional adjustment can be further tested.

The following chapter presents the research methodology utilized for this dissertation: multiple case studies of 4-year institutions and their nontraditional

undergraduates. Interviews with institutional officials and document review provide data on the environment of each institution, including its policies and practices, focusing on nontraditional students, online and hybrid course delivery methods, and changes in online and hybrid course delivery over the last 10 years that may have affected nontraditional students. Data sets from two institutions provide data on student enrollment behavior, background characteristics, and life circumstances for statistical analysis of course delivery method and persistence among nontraditional students. Qualitative and quantitative results from the case studies are analyzed individually and then compared for further insight into the role course delivery method may play in nontraditional student persistence.

CHAPTER 3: METHODOLOGY

Persistence, nontraditional students, and course delivery methods are topics of significance in higher education, as evidenced by the research studies conducted on these individual constructs summarized in the preceding chapter. However, little research has focused on the intersection of nontraditional students and nontraditional delivery methods and its impact on persistence outcomes. This dissertation research study juxtaposed the persistence results of nontraditional students with one of the "levers" available to an institution, that is, how a course is delivered, to provide insight into and understanding of this critical issue in higher education.

Overview

This multiple case study examined the role course delivery method plays in persistence among nontraditional undergraduate students at two 4-year public institutions. In this chapter, I develop in detail the research design, the research questions, data collection procedures, and methods of analysis. Interviews with institutional officials and document review provided data on the environment of each institution, including its policies and practices, focusing on nontraditional students, online and hybrid course delivery methods, and changes in online and hybrid course delivery over the last 10 years that may have affected nontraditional students. Data sets from each institution provided data on student enrollment behavior, background characteristics, and life circumstances for statistical analysis of course delivery methods and persistence among nontraditional

students. Strengths and limitations of the data sets, the methodology utilized, and the researcher are presented.

Worldview and Rationale for Case Study Approach

The research issue that guided this study, nontraditional undergraduate persistence, represents a problem of practice across higher education. The action to continue or withdraw by the individual is taken in the larger context of an institution, with varying influences and factors affecting the decision, and has consequences for all involved. As such, it falls into a worldview characterized by Creswell (2013) as pragmatic. The pragmatic paradigm, focusing on the utility of data to solve problems, advocates the use of any and all approaches to research that lead to solutions (Creswell, 2013; Feilzer, 2010; Johnson & Onwuegbuzie, 2004). In designing research to understand the role course delivery plays in nontraditional student persistence, data from either quantitative or qualitative research would provide a limited view of the problem, focusing on a select aspect of the situation. The issue of persistence does not exist in isolation at the student level but rather reflects the give-and-take that occurs between institution and individual, involving myriad factors that converge, resulting in an individual's decision to persevere or to withdraw. This research study sought to acquire insight into the issue of nontraditional student persistence through a case study involving the collection of qualitative and quantitative data, thus contributing to institutions' understanding of and ability to affect positive outcomes for these students.

Case study design is appropriate when studying phenomena as it allows for both descriptive and explanatory data as well as providing a platform for understanding a process and programmatic implementation (Gay, Mills, & Airasian, 2009). Furthermore,

case study design enables the researcher to contextualize a study and explore contributory relationships. Multiple case study research is prevalent in educational settings, enhancing generalizability and the external validity of studies (Gay et al., 2009). Conducting a multiple case study provides the researcher an opportunity to study the same phenomena at more than one site, providing more extensive evidence than a single unit of study and enhancing the external validity or generalizability of the study.

Yin (2014), drawing from quantitative experimental research design, suggested that evidence based on replication is a compelling and meaningful advantage of multiple case study design. The choice to use multiple case study design allows the researcher to perform literal or theoretical replication to confirm or contradict original propositions. Autonomous data from two or more cases offer the prospect of more robust findings and, if consistent, may lead to persuasive conclusions. Thus, Yin recommended at least two cases to avoid the criticisms of single-case studies, which include rareness or inauthenticity.

Research Questions

The overarching purpose of this study was to understand the role course delivery method plays in persistence among nontraditional undergraduate students at two large 4-year institutions in the southeastern United States. Specifically, I examined the following research questions related to the overarching purpose:

1. What is the context of online and hybrid course delivery for nontraditional undergraduate students at each institution? That is, how are online and hybrid course delivery methods presented or described in institutional materials for nontraditional students, for example, policies and documents? How do these

institutions define online and hybrid course delivery methods? What proportion of courses is available to nontraditional students in a nontraditional format, and how has availability changed in the past 10 years?

2. Taking into account background, life circumstances, and enrollment behavior, to what extent is course delivery method (majority online, majority hybrid, or majority traditional) predictive of persistence among nontraditional students at each institution?
3. What similarities and differences in context and student results can be seen across the two institutions?

Research Design

The study utilized Yin's (2014) research design for multiple case studies with an embedded unit of analysis, depicted in Figure 3. Several data sources were examined to analyze the contextual conditions in relation to each case, which is illustrated with the dotted lines between the two. Data from the selected institutions were analyzed to understand the policies of each institution and the intended outcomes of those policies on nontraditional student persistence. Interviews with representatives provided the primary source of qualitative data; these were conducted to understand the larger context in which the relationship of interest exists, that is, between course delivery method and nontraditional student persistence. Additionally, materials from each institution were examined for presentation and description of online and hybrid course delivery methods in materials, including those specifically for nontraditional students and for other external audiences. The definition of online and hybrid course delivery method and the change in availability of courses in a nontraditional format over the preceding decade, that is, 2005–

2015, were reviewed for similarities and differences. The embedded analysis utilized a correlational design (binary logistic regression) with student data sets from each institution to analyze the relationship between course delivery method and nontraditional student persistence.

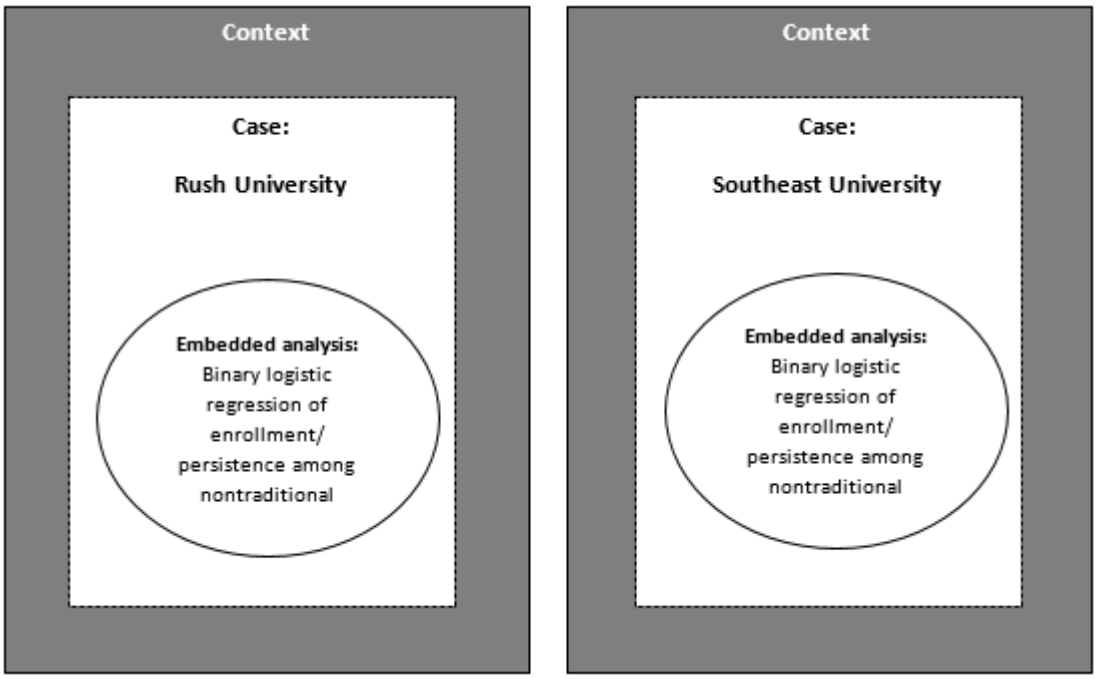

Figure 3: Yin's (2014) multiple case study design with embedded analysis.

Site and Sample Selection

Although nontraditional students are found in almost all types of higher education institutions, I chose to focus on two representative public 4-year institutions. There are other types of higher education institutions that could fruitfully be studied, based on the results of this study; others and I will likely pursue those options. Certainly the

enrollment of nontraditional students in public 4-year institutions justified setting this study here.

I selected two cases for the study: higher education institutions that will be called "Rush University" and "Southeast University" for the purposes of this inquiry. They are both 4-year public institutions in the southeastern United States. Rush University is a doctoral-high research university granting bachelor's, master's, and doctoral degrees; Southeast University is a masters-medium university granting bachelor's, master's, and doctoral degrees. Serving nontraditional students is a common element of each institution's history.

Rush University is part of a multi-campus public higher education system. The institution's beginnings date to the post–World War II era, when the nation responded to the needs of returning veterans with evening colleges and other educational and training programs. In the mid-1960's Rush University was established. Today it serves more than 27,000 students, with significant growth projected.

Rush University has multiple programs in place to support nontraditional undergraduate students who are entering higher education for the first time or returning to complete a degree. An umbrella office serving adult students provides specific information, services, and programming to nontraditional learners, including orientation, academic advising, mentoring, and sponsorship of honor societies and scholarships. Other campus programs offer mentoring to nontraditional students, support students returning to complete degrees, and serve veterans.

Southeast University began its history as an institution of higher education in the late 19th century that trained teachers to serve local and regional needs. A minority

serving campus, it currently prepares individuals across a variety of disciplines, including business, health care, education, and the sciences, with degrees up to and including doctoral degrees. Enrollment at Southeast University is more than 6,000 students.

Nontraditional students, including adults, commuters, and veterans, are the focus of a specific office at the institution. Southeast University has recognized the unique needs of these students and the significant population these students represent, providing programming, information, and other services through both online and on-campus presence.

Selection of institutional informants to provide context, e.g., policy and strategy, was based on the following criteria: (a) has a role in and responsibility for setting institutional policy and strategy for course delivery; (b) has a direct role in and responsibility for determining course delivery method across the institution; and (c) has a direct role in and responsibility for supporting online and hybrid course delivery across the institution, for example, technology and instructional design. Throughout the data collection process, the focus remained on the organization, with individuals serving as informants.

Deidentified student data files consisting of individual student records were studied to answer Research Question 2, in particular, the extent to which course delivery method may predict persistence at these two institutions, included male and female students pursuing a bachelor's degree. The participants were aged 24 years or older and at least minimally nontraditional according to the NCES definition.

In addition to the demographic characteristics indicated earlier, selection criteria included both of the following enrollment behaviors: (a) matriculation during either Fall

2009 or Spring 2010 as a first-time freshman or as a transfer into a studied institution and (b) completed course work during at least three academic terms during the period beginning Fall 2009 and concluding Spring 2015. Sample selection included those nontraditional students meeting the criteria detailed heretofore. Excluded from the sample were traditional students pursuing bachelor's degrees, that is, those aged younger than 24 years. In addition, nontraditional students who matriculated before or after the time frame specified earlier or completed course work in less than three academic terms were disqualified as participants for the purposes of this study.

Data Collection Procedures

Interviews

The primary means of collecting data to describe the context at each institution (Research Question 1) was in-depth semi-structured phone interviews beginning with institutional representatives responsible for determining course delivery method strategy at each institution. See Appendix A for a complete interview protocol and questions.

The interviews followed a protocol consisting of open-ended questions designed to address the institutional contribution to nontraditional student persistence through course delivery method strategy. The questions focused on institutional strategies around online and hybrid course delivery methods. To further strengthen the qualitative data collection, an empty table shell or word table with axes based on the research questions was developed prior to data collection (Yin, 2014). This additional data collection device supported clarity and consistency in the data collection process and contributed to analysis of the data; see Appendix B.

Prior to the scheduled phone interviews, participants were provided with the questions and informed of my plan to tape-record the interviews and transcribe the data collected verbatim. Posttranscription, respondents were afforded the opportunity to review and correct, if needed, the transcribed results.

Documents and Artifacts

Interview participants were asked to provide documents, materials, and other artifacts related to course delivery methodology at their institutions. These included internal documents developed by the institution, for example, policy manuals, standard operating procedures, short- and long-term planning documents, and budgets, and publicly available and marketed materials, for example, Web pages, pamphlets, brochures, and advertising. These documents contributed to understanding the context in which online and hybrid course delivery exist in these institutions.

Student Data

Deidentified student data files for students meeting the required characteristics previously described were requested from each institution. Institutional representatives agreed to provide these data once the study had been approved by the UNC Charlotte Institutional Review Board (IRB; Appendix C).

The data fields requested represented variables for the study aligned to Research Question 2: Taking into account background, life circumstances, and enrollment behavior, to what extent is course delivery method (majority online, majority hybrid, or majority traditional) predictive of persistence among nontraditional students at each institution? Students belonged to one of two outcome groups,

continuing/completed/graduated or not continuing/inactive, representing the dependent variable in the study, possibly influenced by the independent variables.

Dependent Variable

To answer the second research question, one dependent variable was measured in this study. Each student's persistence behavior was captured at the end of a 6-year period and recorded as 0 = no degree, inactive (not registered for any course in the 12 months prior to and including Spring 2015), 1 = active (registered for at least one course in the 12 months prior to and including Spring 2015) or completed/attained degree.

Nontraditional students pursue higher education through many and varied pathways. Studying their credential attainment and continued persistence requires a nuanced and nimble approach, reflecting the myriad ways the goal is reached despite a multitude of factors known to impede their ultimate success. As discussed earlier, this population has higher rates of stop out behavior, part-time enrollment, and full-time employment, all of which affect time to completion/degree attainment.

Independent Variables

Independent or predictor variables, which may support or limit nontraditional student persistence, were identified in the literature review, which included theories of student persistence (Bean & Metzner, 1985; Berge & Huang, 2004; Falcone, 2011; Kember et al., 1994; Rovai, 2003; Shea & Bidjerano, 2014; Spady, 1970; Tinto, 1975) and factors used in scholarly and governmental reports of student persistence (Choy, 2002). These are grouped as background, life circumstance, and enrollment behaviors. Appendix D provides the names, definitions, and coding for each of the variables used in the binomial regression analysis.

Consistent with previous research, three control variables capturing background and demographics—gender, race/ethnicity, and age—were included in the regression models. Current and fluid life circumstances were included in the model, represented by Pell Grant recipient status. Several college enrollment behaviors also purported to be associated with persistence behavior were included in the regression model, including transfer status, registration behavior, enrollment status, stop out action, remedial course taking, and first-year GPA. Finally, the primary independent variable of interest in the study was the characterization of the majority course delivery method experienced by the student at the institution (60% or more of course credits earned). Final categories for each variable in this study were created after examining the distributions once data was collected from the two cases. Full definitions and coding schemes for each variable are shown in Appendix D.

Data Analysis

Qualitative Contextual Data: Descriptive

Qualitative data collection and analysis occur in concert with an intent to derive meaning from the data (Gay et al., 2009). The raw data were organized and prepared for analysis: interview recordings were transcribed and visual materials were cataloged. After reading through all the data, the review and organization of the data in the study included manipulation intended to reveal patterns or insights through such means as categorizing, displays, tabulating frequency of mentions, and/or development of a temporal scheme. Coding of the data was accomplished with the use of NVivo software, which is specifically for unstructured or qualitative data and is available through UNC Charlotte IT Services. Utilization of coding software offers efficiency, time saving, and

effectiveness by its potential to meaningfully relate qualitative and quantitative data. A codebook was developed throughout the qualitative phase of the research; as interviews were conducted and data were collected, definitions were developed to ensure consistency and clarity of codes used in the analysis.

Coding of the data provided the foundation from which to determine themes in the research results and to create a description of the organization in each case. Themes found through data analysis formed the basis of the research findings, including their interrelationships and, ultimately, the interpretation of the results and learnings from the study.

Binomial Logistic Regression: Student Data

I used IBM Statistical Package for Social Sciences software (SPSS, Version 23) for all statistical analysis of the quantitative data. Prior to analysis, the data were screened for outliers, homoscedasticity, multicollinearity, linearity, model specification, independence, and normality of distribution by way of visual inspection, search for missing data, as well as other descriptive statistic data analyses, that is, frequency, means, and standard deviations; box plots; stem and leaf plots; tests for skewness; and kurtosis values. Highlights of the descriptive statistics are included in the text and reported in tables, as appropriate (see chapter 4).

The research questions led to the choice of statistical testing and analysis for the study. The dependent variable in this study, persistence, was operationalized into categorical outcomes that cannot be meaningfully ordered: 0 = no degree, inactive (not registered for any course in the 12 months prior to and including Spring 2015), 1 = no

degree, active (registered for at least one course in the 12 months prior to and including Spring 2015) or completed/attained degree.

Huck (2012) indicated two purposes of regression: to predict or explain relationships, focusing on the variables of interest rather than the link among variables, and, if predicting, the focus is on the dependent variable, whereas if explaining, it is on the independent variable. In this study, the variable of interest was nontraditional student persistence (dependent) and the regression focus was course delivery method, that is, face-to-face, online/hybrid, or nonmajority/mixed independent variables that may explain the different outcomes, albeit after the fact. With a categorical dependent variable and several independent variables included, binary logistic regression was appropriate for the study (Huck, 2012).

Binary logistic regression provided the means to use the concept of odds in explaining the effect of the independent variable, course delivery method, on the dependent variable, persistence, in the study. In addition to odds ratio, adjusted odds ratio was computed to understand the potential combined impact of independent variables included in the study. Significance confidence intervals were calculated in order to determine whether they supported rejection or retention of the non-directional null hypothesis, that is, persistence rates among nontraditional undergraduates do not vary based on course delivery method. Finally, equal attention was paid to the practical significance of the study results and are discussed in chapter 5.

Cross-Case Analysis

The goal of cross-case analysis in this study was to determine replication or contrast between the cases. Following independent analysis of the individual cases, cross-

case analysis was conducted to identify similarities and differences, observing if any patterns were yielded across the cases, and to tease out common themes, developing conclusions if the data supported them. Results of the qualitative descriptive interviews and binomial regression performed on the student data were compared across cases with the intention of revealing commonalities and variations.

Validity and Reliability

Reliability and validity of data collection and analysis are as important in qualitative research as they are in quantitative research (Creswell, 2013; Gay et al., 2009; Yin, 2014). The means by which credibility in qualitative research is established are different, however, and, important to observe. To ensure the integrity of qualitative research, certain procedures must be followed throughout the study, including accuracy of data from both my and the participant's points of view. Yin proposed principles to follow in the collection process; select ones were used in this study, including multiple sources of evidence, creation of a database for ease of retrieval and orderly manipulation, and maintaining a "chain of evidence" that connects the research question and the case study report through referencing of specific evidence in the database. Multiple sources of evidence, ensuring validity of each case, allowed for triangulation, and member checking verified that the analysis of each case is sound. In this study, triangulation was sought between interviews, documents, and archival records. Participants were offered the opportunity to comment on findings prior to completion of the study and reporting of results. Additionally, detailed description of the setting, that is, thick and rich portrayal using all information were included, increasing the realistic depiction of a case.

To ensure that conclusions drawn and recommendations made from the quantitative data analysis in a study are of high quality, the collection of the data and ensuing summarization and analysis should be examined for reliability and validity (Huck, 2012). *Reliability* refers to the consistency of the data, whereas *validity* refers to its accuracy. Reliability testing in the study focused on internal consistency as the analysis is not being conducted over time or across forms. Results of the measurement process should also be accurate, thus measures of validity are recommended. Although consistency of data does not guarantee its accuracy, accuracy necessitates consistency.

Validity describes the level to which a research study correctly measures the concept or construct of interest (Huck, 2012). To ensure content validity of the analysis, this study utilized independent variables that are consistent with previous studies of nontraditional students and their persistence outcomes (Choy, 2002; Pontes & Pontes, 2012a amd 2012b; Ross et al., 2012) and theoretical models discussed in chapter 2 (Bean & Metzner, 1985; Berge & Huang, 2004; Falcone, 2011; Kember et al., 1994; Rovai, 2003; Tinto, 1975).

Role of the Researcher

In this study, the role of the researcher differs between the two phases due to the nature of the data, the collection methods, and analysis procedures. In the quantitative component of the study, I specified the variables of interest, requested the data sets from the registrar's office at each institution, and collected the data using standard procedures for statistical testing. Rigorous statistical analysis techniques were used to analyze the data for both descriptive and inferential results. Interpretation of the results has been

based on customary values of the statistical significance usually associated with the functions.

The research plan also included qualitative data collection and analysis, during which I played the central role in both steps. I contacted and conducted the interviews with the primary informants from each institution. I also identified and collected documents and other materials relevant to the case for descriptive and analytical purposes.

The possibility of researcher bias and its potential to influence research results exist in every study, including this one. The research plan included steps in both phases, quantitative and qualitative, to reduce the effects of researcher bias, including use of standard quantitative techniques and tests for significance, triangulating of data sources, member checking, and thick and rich description of each case to ensure accuracy of the findings. Moreover, my dissertation committee monitored and appraised research procedures and data analysis in the study, providing comment and critique as needed.

Ethical Considerations

Each phase of the study included addressing ethical considerations and securing permissions to conduct research in accordance with federal regulations and UNC Charlotte policy. Beginning with the IRB protocol application form filing, I provided information about myself, funding sources, conflicts of interest, study purpose, participants, study design, methods and procedures, study setting, confidentiality procedures, data security, discussion of risks, benefits to participants/society, inducements and costs, data analysis, recruitment methods, and means of gaining informed consent.

The study qualified for expedited status by the IRB for the following reasons:

1. Qualitative
    a. Data derived from interviews with institutional representatives occurred after informed consent was secured
    b. Identities were protected by use of pseudonyms in the final reporting
2. Quantitative
    a. Data sets were deidentified and derived from information that already existed at each institution
    b. Information was not sensitive
    c. Age of the sample population was over 19 years

The informed consent samples and checklist available on the UNC Charlotte IRB Web site were used to develop the appropriate documents for the qualitative interviews. These introduced me as the researcher, explained the purpose of the study, described the procedure and the role of the participants, provided foreseen risks and benefits, and included a volunteer statement. In addition, participants were told that summary data would be shared with my doctoral committee and other appropriate representatives of the university, and may be disseminated to the professional community through presentations or publications; however, in no way would responses be traceable to individual participants in the study.

All study data that can be maintained and stored on a personal computer, including quantitative data files, interview tapes, and transcripts, are being kept on my personal computer, which is password protected. In addition, documents and other

materials that are not easily stored on a computer are being kept in locked files and drawers at my office. After a period of 5 years, I will destroy the data.

Strengths and Limitations

This research study offers the creative advantage of combining qualitative and quantitative methods to strengthen the findings and limit the disadvantages of each approach (Creswell, 2013; Gay et al., 2009). Furthermore, it allows for comparison of perspectives advanced from quantitative and qualitative data, in this instance, bringing to bear collective results derived from quantitative analysis of data sets and organizational perceptions and experience gathered from interviews and document analysis. Specific advantages of a multiple case study include the following:

1. Method of data collection can be adjusted to a single researcher, sequentially, allowing for division into two manageable steps.
2. Evidence from multiple cases is considered more robust.

Limitations of this design include the following:

1. Time and resource requirements can be extensive.
2. No significant difference may be found from the quantitative phase.

Chapter Summary

As a multifaceted problem of practice, nontraditional student persistence challenges higher education institutions across the United States. This multiple case study looked at the issue through the lens of the institution, focusing specifically on course delivery method and its influence on persistence among nontraditional students. Qualitative research in the form of interviews with administrators and document review provided the context, informing our understanding of the institutional perspective and the

environment in which a specific nontraditional student behavior, that is, persistence, occurs. Embedded quantitative analysis, via binomial regression, was used to understand what, if any, relationship exists between nontraditional student persistence and course delivery method in these two institutions during the study period.

Two 4-year public research universities in the southeastern United States provided the cases for this study. Each has historically served nontraditional students. The institutions' policies, procedures, and intentions with respect to online and hybrid course delivery were juxtaposed with nontraditional student outcomes to form a more complete understanding of persistence and completion among this large and growing population in higher education. After analysis of each institution independently, cross-case analysis was conducted to determine replication or contrast between the cases.

In conclusion, the research study was intended to provide insight into the influence of course delivery on persistence for nontraditional students at the selected universities by examining qualitative and quantitative data. In combination, the institutional context and student outcome data provided descriptive and explanatory data, allowing for exploration of contributory relationships and resulting in a richer, more complete view of the two universities and their nontraditional students.

CHAPTER 4: ANALYSIS OF DATA, FINDINGS, AND RESULTS

The research issue that guided this study, nontraditional undergraduate student persistence, represents a problem of practice across higher education. The action to continue or withdraw is taken by the individual in the larger context of an institution, with varying influences and factors affecting the decision, and has consequences for all involved. In designing research to understand the role course delivery plays in nontraditional student persistence, data from either quantitative or qualitative research would provide a limited view of the problem by focusing on a select aspect of the situation. The issue of persistence does not exist in isolation at the student level but rather reflects the give-and-take that occurs between institution and individual, involving myriad factors that converge, resulting in an individual's decision to persevere or to withdraw. This research study sought insight into the issue of nontraditional student persistence through a case study involving the collection of qualitative and quantitative data, thus contributing to institutions' understanding of and ability to support positive outcomes for these students.

Using a multiple case study approach, I examined the role course delivery plays in persistence among nontraditional undergraduate students at two 4-year public institutions. Both quantitative and qualitative data sources were analyzed for each case. Binomial logistic regression was performed to determine if course delivery method was predictive of persistence at each institution. Within-case qualitative analysis included descriptive

and thematic analysis of data gathered through interviews and institutional documents. Finally, cross-case analysis of case-based quantitative and qualitative results was conducted to explore similarities and differences between the cases.

In this chapter, I describe the data and present the results of the within- and cross-case analyses. Interviews with institutional officials and document review provided data on the environment of each institution, including its policies and practices focusing on nontraditional students, online and hybrid course delivery methods, and changes in online and hybrid course delivery over the last 10 years that may have affected nontraditional students. Data sets from the two institutions provided data on student enrollment behavior, background characteristics, and life circumstances for statistical analysis of course delivery method and persistence among nontraditional students who enrolled for the first time in Fall 2009 or Spring 2010.

Case 1: Rush University

Research Question 1

Understanding the context of online and hybrid course delivery for nontraditional undergraduate students at each institution was the goal of the first research question. To identify appropriate institutional informants, I reviewed organizational information available on the Rush University Web site, focusing on offices or departments responsible for nontraditional delivery of courses and/or nontraditional students. I found that Rush University had two units specifically focused on these key constructs of my study; the leadership of each unit either was agreeable to direct participation in the study or identified a member of their staff to participate.

The institutional informants providing data on Rush University were mid-level administrators responsible for distance education, adult student services, or academic program management. The tenure of the informants ranged from 16 months to 3 years in their current positions and from 3 to 8 years overall at their institution.

After initial outreach via e-mail (Appendix E) and agreement to participate, each informant completed an Institutional Informant Informed Consent document (Appendix F). Individual interviews, lasting approximately 30 minutes, were conducted by phone using the protocol and questions in Appendix A. I recorded and transcribed the interviews to facilitate analysis using NVivo software. From the data analysis and coding of responses, themes were identified.

I initially reviewed each informant's responses to the interview questions (Appendix A) before analyzing them using NVivo software, which allowed for efficient and effective coding of the data. Using NVivo, I determined frequency of mentions of key words or terms to determine patterns. A final step in analyzing the qualitative data from Rush University employed the data shell table (Appendix B) in which the specific interview questions and each informant's responses were documented, coded, and analyzed for themes.

From institutional informant responses to the interview questions (Appendix A), five themes emerged regarding nontraditional delivery of courses at Rush University:

Theme 1: Continuation of commitment. Rush informants indicated that online and hybrid delivery formats are the latest chapters in the institution's history of distance education. The personnel interviewed noted that over the past two decades, new tactics,

based on advances in technology, were deployed but the strategy to meet nontraditional students' needs is ongoing:

> The history goes back at least into the late '90s. They may have started out in video. (academic program manager)

> So the pattern that's existed for the last maybe 20 years, we used to have . . . before online education became as robust as it is now . . . we used to teach lots of evening and weekend courses and so we had a large nontraditional student population for a long time. (advisor to nontraditional students)

Theme 2: Stabilizing definitions of online learning. Administrators at Rush shared that over the last decade course delivery method definitions have become more clear and consistent, with time and technology being key variables in defining course delivery method:

> Face-to-face is meeting in person generally for about two and a half hours once, twice or three times a week. Online is 100% online. Everything takes place using the course dashboard system. (advisor to nontraditional students)

> It's either 100% asynchronous or synchronous, Internet or Web-based delivery. (director of distance education)

> I've seen them become more clear in terms of the course catalog. When you go and look back in the course catalog in previous semesters the delineation between online and hybrid and face-to-face was not always consistent. (advisor to nontraditional students)

Theme 3: Growth of offerings. Personnel at Rush have seen meaningful increases in online and hybrid courses available to all students:

> The increase since 2006 was 900% in online courses. We went from having a total of 16 in fall of 2006 to having 162 in the spring of 2015. (advisor to nontraditional students)

> In the fiscal year 2008 there were 3% of our total student credit hours earned in online. . . . We're now at 9% that are totally Internet based, and then there's an additional 5% that are hybrid. (director of distance education)

Theme 4: Shared expectations of students and faculty. Rush informants believe most students expect to take some of their courses online or in a hybrid format and most

faculty are increasingly prepared to teach using Internet resources in part or in whole to deliver the course:

> Many of our students have come from … already experienced some sort of online delivery method in their academic history. It's becoming more accepted and more expected. (director of distance education)

> It's more common that faculty are almost expecting that they're going to be doing some kind of online teaching. A lot of those who have come from other institutions . . . it's very likely that they've done something or they've had at least a hybrid experience of their own. (director of distance education)

Theme 5: Lack of targeted marketing to reach nontraditional students or focus on course delivery method. Rush informants indicated marketing is primarily through programmatic communication, for example, nursing or education degrees, not focused on a particular student population or delivery method:

> Much of our marketing, especially out of my office, is done program specific. We're recruiting a specific target audience for that program. (director of distance education)

> To my knowledge there's no discussion of course delivery methods in materials for nontraditional students outside of things like our Web site. And on our Web site it's simply informing them. . . . We don't really market delivery methods. (advisor to nontraditional students)

> Marketing is driven by program. (academic program manager)

> We're recruiting a specific target audience for that program and it would most often be working adults so we will use I would say pretty common language in our marketing materials such as flexible delivery. (director of distance education)

Institutional informants provided environmental perspective in which the results of the quantitative analysis of nontraditional undergraduate persistence at Rush University can be situated. Online and hybrid course delivery utilizing computer and Internet technology is the most recent manifestation of institutional commitment to distance education and nontraditional students. Increased availability, common definitions, and experiences of technology in teaching and learning leading to like

expectations among students and faculty provide insight into the institutional environment of Rush University.

Research Question 2

The goal of the second research question was to understand the relationship between course delivery method and persistence among nontraditional students at a given institution. In other words, after taking into account background, life circumstances, and enrollment behavior, to what extent is course delivery method (majority face-to-face, majority online/hybrid, or nonmajority/mixed) predictive of persistence among nontraditional students?

The first step in answering this question is descriptive statistical analysis of the sample and participants. A total of 6,531 undergraduate students enrolled at Rush University in Fall 2009 or Spring 2010 as either new freshmen or new transfers into the institution. From this population, a sample meeting the criteria of the research design was drawn. Specifically, first-time beginning or transfer students aged 24 years or older who completed at least three terms at the institution were selected, resulting in 847 student records to be analyzed. After visual inspection to eliminate student records with missing data, the data set was exported into IBM SPSS (Version 23) and prepared for analysis.

The Rush sample was roughly evenly split by gender, and by race/ethnicity when comparing white students to those of color; students between 24 and 29 years old were the larger age group (59%). Furthermore, nearly all the students in the sample had transferred to the institution (99%), with a large portion being Pell Grant recipients (59%). Most students remained continuously enrolled (85%), took no remedial course

work (87%), and were part time at some point during the study period (85%). The mean first-year GPA of the sample was 3.13.

Nine out of 10 students in the study took the majority of their courses in a face-to-face format. More than three-quarters of the sample persisted, completed their degrees or maintained active status, at Rush University during the 6-year study period (77%) as compared to 57% for all students in the same entering class of first-time beginning and transfer students.

Course delivery method was a key construct under examination in this study. As discussed in the literature, there are not standard definitions across institutions; however, there are generally accepted norms or ranges, and the two institutions in this study fell within these. As defined in chapter 3, the study operationalized course delivery as follows:

- *Face-to-face.* Approximately 80% or more of course content is delivered in person with instructor and student in the same location and may include utilization of a course management system or other technology to facilitate learning.
- *Hybrid or online.* At least 21% and up to 100% of course content is delivered online; this may include a mix of face-to-face and online course delivery.

Individual course taking was analyzed to determine which of the two course delivery methods constituted a majority (60% or greater). In the event that neither delivery method reached the 60% threshold, the student was designated as "nonmajority."

I examined the course delivery method subgroups according to background and enrollment characteristics (Table 6). Common characteristics across all delivery methods

in the sample from Rush University were transfer status (96.2%–100%), continuous full-time enrollment (77.5%–88.5%), and degree completion or continued active status during the study (65.4%–77.8%). Differences found between the course delivery method groups at Rush University included gender, age, and Pell Grant recipient status.

Face-to-face students were roughly split by gender, and race/ethnicity; more were between 24 and 29 years old (62%), and Pell Grant recipients (61%). Online students were slightly more female (58%) than male, mostly White (78%), 30 years old or older (75%), and not Pell Grant recipients (73%). Nonmajority or mixed course delivery students were majority female (96%), 30 years old or older (77%), and Pell Grant recipients (62%); African Americans composed the largest ethnic group (46%).

Table 6: Frequencies of variables by course delivery method, Rush University

	Face-to-face[a]		Online[b]		Nonmajority[c]	
	Freq.	%	Freq.	%	Freq.	%
Gender:						
Male	434	55.6	17	42.5	1	3.8
Female	347	44.4	23	57.5	25	96.2
Ethnicity						
White	420	53.8	31	77.5	11	42.3
African American	158	20.2	3	7.5	12	46.2
All other/unknown	203	26	6	15	3	11.5
Matriculation age (years)						
24–29	487	62.4	10	25	6	23.1

Table 6 (*continued*)

	Face-to-face[a]		Online[b]		Nonmajority[c]	
	Freq.	%	Freq.	%	Freq	%
≥30	294	37.6	30	75	20	76.9
Pell Grant recipient						
Not a recipient	308	39.4	29	72.5	10	38.5
Recipient	473	60.6	11	27.5	16	61.5
Matriculation status						
Beginning undergraduate	8	1	0	0	1	3.8
Transfer student	773	99	40	100	25	96.2
Intensity of course taking						
Full time, all the time	134	17.2	0	0	0	0
Part time anytime	647	82.8	40	100	26	100
Stop out actions						
Continuous enrollment	666	85.3	31	77.5	23	88.5
Unregistered one or more terms	115	14.7	9	22.5	3	11.5
Remedial course work						
No remedial course work	681	87.2	40	100	24	92.3
One or more remedial courses	100	12.8	0	0	2	7.7
Persistence						
No degree, inactive	173	22.2	9	22.5	9	34.6
Degree completed or still active	608	77.8	31	77.5	17	65.4

[a]*n* = 781. [b]*n* = 40. [c]*n* = 26.

To better understand the hybrid/online subgroup from the Rush University sample, a follow-up request was made of the institution to provide the breakdown by major of the sample. The largest portion, 58%, majored in respiratory therapy, followed by electrical engineering technology (18%). Six of the nine declared majors found among this subgroup were promoted on the Rush University Web site for distance education: respiratory therapy, electrical engineering technology, fire safety engineering technology, RN to BSN completion, and education. Other majors of students taking the majority of their courses online or hybrid included biology, and business administration.

Regression analysis serves to predict or explain relationships by focusing on the variables of interest rather than the link among the variables. In this study, the regression focus is on course delivery method (the independent variable of interest), which may, after the fact, predict nontraditional student persistence (the outcome or dependent variable). With a binary dependent variable and several independent variables included, logistic regression was utilized as the most appropriate method.

Results of the binary logistic regression analysis indicate course delivery—online or hybrid ($b = 0.59$) and nonmajority/mixed ($b = 0.37$) are not predictive of persistence at a statistically significant level in the sample drawn from Rush University. Variables that were predictive of persistence included first-year GPA ($b = 0.64$; $p < .01$) and Pell Grant recipient ($b = -0.075$; $p < .01$) as well as matriculation as a transfer student ($b = -2.25$; $p < .05$) and taking no remedial courses ($b = 0.92$; $p < .05$). The chi-square value ($X^2(8) = 10.82$, $p = 0.212$) is not statistically significant, indicating a reasonably good fit of the

specified model to the data. Cox and Snell and Nagelkerke *R* values are .08 and .13, respectively.

For every one-point increase in first year GPA, we expect to see a 90% increase in the odds of a student persisting. Taking no remedial courses had a significant positive effect on persistence among nontraditional undergraduates at Rush. The odds of persistence among students who took no remedial courses was 2.52 higher than the odds of persistence of those who took none; 80 % of students not taking remedial courses remained enrolled or completed their degree while only 60% of students who completed remedial courses earned a degree or remained enrolled. Being a Pell Grant recipient at Rush effected persistence negatively, as did matriculation into Rush as a transfer student. Although not having a statistically significant effect on persistence of the Rush sample, other variables with an odds ratio greater than 1.0 included gender: female (1.37), a majority of courses through online or hybrid course delivery (1.8), and nonmajority course delivery (1.45). See Table 7.

In summary, the qualitative data gathered on Rush University yielded themes of increased availability of online and hybrid courses, common definitions of course delivery methods, and experiences of technology in teaching and learning leading to like expectations among students and faculty which provide insight into the institutional environment. Programs, rather than course delivery method and student populations, are the focus of institutional marketing or growth strategies. The quantitative analysis did not find a predictive relationship between course delivery method and nontraditional student persistence. However, four other variables were associated with persistence (first year GPA, taking no remedial courses, matriculation as a transfer student, and being a Pell

Grant recipient), and the odds ratio of three other variables were above 1, indicating an increase in the likelihood of persisting (female gender, taking online or hybrid courses, and taking courses via a mix of delivery methods).

Table 7: Summary of binary logistic regression analysis for variables predicting persistence among nontraditional undergraduate students at Rush University

Predictor	*B*	*SE*	Exp(*B*)	95% CI for exp(*B*)	
				Lower	Upper
Gender: Female	0.31	0.18	1.37	0.96	1.94
Ethnicity					
African American	−0.05	0.21	0.95	0.63	1.45
All other/unknown	−0.17	0.26	0.84	0.51	1.39
Matriculation age: ≥30 years	−0.04	0.19	0.96	0.67	1.38
Matriculation status: Transfer	−2.25*	0.87	0.11	0.02	0.58
Pell Grant recipient	−.075**	0.19	0.47	0.33	0.68
First-year GPA	0.64**	0.11	1.90	1.52	2.38
Intensity of course taking: Part time, anytime	−0.14	0.24	0.87	0.54	1.40
Continuous enrollment	−0.17	0.25	0.84	0.52	1.38
Remedial courses: None	0.92**	0.24	2.52	1.57	4.04
Course delivery					
Online or hybrid	0.59	0.47	1.80	0.72	4.53
Nonmajority	0.37	0.61	1.45	0.44	4.74
Constant	−1.623	0.66	0.20		

Note. $N = 847$. X (df) = 10.82 (8). Cox and Snell $R = .08$. Nagelkerke $R = .13$. Percentage persist = 77.4. GPA = grade point average.

*$p < .05$. **$p < .01$.

The research study involved a second case to provide the prospect of more robust findings as well as allow for cross-case analysis. Findings and results from the second institution add to our understanding of online and hybrid course delivery, and nontraditional undergraduate students.

Case 2: Southeast University

Research Question 1

Like the first case, understanding the environment in which course delivery and nontraditional undergraduate students intersect provides context for a more holistic understanding of student outcomes. Institutional informants at Southeast University were ascertained through referral by individuals familiar with the organization and research on the institution's Web site. I determined that within Southeast University, academic leadership and administrators were responsible for nontraditional delivery of courses and nontraditional students. Three individuals were identified with the appropriate oversight and tenure for my study and had a willingness to participate.

The institutional informants providing data on Southeast University included senior administrators responsible for academic program management, distance or online education, and academic leadership of the institution. Tenure of the informants ranged from 3 to 8 years in their current positions and from 10 to 35 years overall at their institution.

I contacted each prospective informant first by e-mail (Appendix E). Before proceeding, each informant completed an Institutional Informant Informed Consent document (Appendix F). Phone interviews, lasting approximately 30 minutes, were conducted with each informant individually using the protocol and questions in Appendix

A. I recorded and transcribed the interviews into text documents for analysis using NVivo software.

I performed an initial review of each informant's responses to the interview questions (Appendix A); analysis and coding of the data using NVivo software was the next step. Using NVivo, I determined frequency of mentions of key words or terms. A final step in analyzing the qualitative data from Southeast University employed the data shell table (Appendix B) in which the specific interview questions and each informant's responses were documented, coded, and analyzed for themes.

Four themes were identified from institutional informant responses to the interview questions (Appendix A) regarding nontraditional delivery of courses at Southeast University:

Theme 1: Financial support. Southeast informants' experience suggested that financial resources promote development of online and hybrid course delivery:

> [In] 1999 . . . the legislature passed some bill and so it was a system-wide kind of push to expand online degree programs . . . a big thing that helps drive things is when there's funding and there's financial support and incentives to do things and, you know, there was a lot of that at the beginning and then we went through 7 years of very significant budget cuts and so, I mean, I think that that has a big part in the slowing down of the growth is the lack of financial resources. (senior administrator)

Theme 2: Commitment of leadership. Personnel at Southeast believe that institutional intentionality, in concert with funding, was critical to the development of online courses and programs:

> The chancellor that we had at the time [1999] . . . was an extremely progressive chancellor and so . . . there was a huge push over the course of I'd say like 5 years to promote online degree programs and so as a result of that . . . we had . . . programs that were created out of that. (senior administrator)

Theme 3: Based on student needs. Characteristics of the institution's students have driven course delivery throughout its history according to institutional informants at Southeast. In their experience online and hybrid courses are the most recent manifestations of how Southeast University has delivered education to students through nontraditional means:

> I think the thing with nontraditional students is . . . they have such different needs than traditional students and so if you're gonna be successful you have to target what they need; you have to give them what they need and I think that's probably the crux of everything with these students. They don't need, you know, really the Student Affairs. They're probably not gonna come to football games, you know, so they need a whole host of other things to be successful and you have to ask them what they need and then you have to try and give it to them. (senior administrator)

> Online courses have though designed initially for those who would have been considered nontraditional students, the working person. (academic dean)

> When we first started our online courses we prohibited students from taking them who were on-campus students. In other words, we purposely made it our position that if you were living in the residence hall for example you could not take a course online if you live in the residence hall. You had to be a student who was off-campus. Well that became difficult to maintain because the online courses were at times the students felt were more pleasing to them because even if a student was in the residence hall oftentimes they were working. And so they wanted to take the course at 2:00 A.M. when they weren't working. So we found then that the face-to-face enrollment went down and the online courses had waiting [lists]. (academic dean)

> A long . . . history of trying to reach out to nontraditional students. . . . In the 1970s we do instruction on the [military base] campus. . . . We've been there offering classes, face-to-face classes for soldiers . . . since the 1970s. We've done this for many years even to some extent this day, but we do weekend and evening classes. And the other thing that we do and this was driven in part by the military we're one of the first schools, I think some other schools do it now . . . to offer classes on an 8-week calendar. And the military really likes that format because they take fewer classes at one time but then they can complete them even before the advent of online and distance ed we were trying to do things to serve adult learners. (senior academic leader)

Theme 4: Survival, growth, and enhancement. Southeast informants see online and hybrid course delivery as having enabled growth in enrollment during times of fiscal

constraint as well as augmenting the quality of teaching and learning experienced at their institution:

> We're finding that the university survival . . . [makes it] necessary for us to allow the traditional student to enroll on those classes. And it is a way to sustain and maintain your program when you have cuts like we've had to cause you to reduce the numbers of your faculty. So if we can only have one session or only one section that section probably is going to be online section. (academic dean)

> Growth of our online courses has remained absolutely steady. Our online enrollment has surpassed all of our other enrollments, even during our biggest budget crises. (senior administrator)

> Our faculty have embraced online education. . . . The faculty had generally not seen online as an enemy. They see it as a way of enhancing instruction and increasing enrollment in their programs. . . . I'm thinking that helps to drive the discussion of good effective course design for everybody. . . . What I see going on in online courses helps improve course design elsewhere. (senior academic leader)

Online and hybrid course delivery at Southeast University developed as a result of financial commitment, executive-level leadership, and student needs. As a result, online courses grew in both quantity and quality, enhancing teaching and learning across programs and course delivery methods. Online and hybrid course delivery methods are seen as necessary to the continued existence of many programs and as indicative of a long-standing commitment to educating students through innovative means.

Research Question 2

Understanding the relationship between course delivery method and nontraditional student persistence at a particular institution is the intention of the second research question. In other words, after taking into account background, life circumstances, and enrollment behavior, to what extent is course delivery method (majority online, majority hybrid, or majority traditional) predictive of persistence among nontraditional students?

Answering the second question begins with descriptive statistical analysis of the sample and participants. A total of 1,926 undergraduate students enrolled at Southeast University in Fall 2009 or Spring 2010 as new freshmen or new transfers. From this population, a sample meeting the criteria of the research design was drawn with 373 student records meeting the study criteria: first time beginning or transfer students aged 24 years or older who completed at least three terms at the institution. I verified that student records were complete through visual inspection; the data set was then exported into IBM SPSS (Version 23) for analysis.

The sample from Southeast University was majority female (76%), aged 30 years or older (67%). The largest ethnic group was African American (43%). Three-quarters of the sample were Pell Grant recipients and virtually all were transfer students (97%). A majority of the sample were part-time students at some point in the study period (56%) and were enrolled continuously (60%). Face-to-face was the majority delivery method (64%) for the sample, followed by online (25%) and nonmajority (11%). The mean first-year GPA of the sample was 3.09.

68% of students in the sample persisted, completed their degrees or remained active, throughout the 6-year study period. The first-time beginning and transfer total population persistence rate was 35% at Southeast.

Unlike Rush University where 12% of the sample took one or more remedial courses, the Southeast sample had no students in remedial courses. To better understand this difference, I made a follow up request via email of the institution asking for context and clarification. One of the institutional informants shared their strategy which uses high school GPA and SAT scores of all new undergraduates at Southeast for placement in

first-year English and math courses that are either 3-or 4-credit hour sections; those in the 4-credit hour sections participate in a weekly lab with additional work that is part of the course curriculum and tied to the course grade. As a result, no course at Southeast is classified as remedial. In addition, half or more of all newly enrolled students at Southeast are transfer students who have completed entry-level college course work at another institution and do not need remedial classes.

Course delivery method was one of three constructs considered in this research study. I examined the course delivery method subgroups according to background and enrollment characteristics (Table 8). Common characteristics across all delivery methods were female (68.5%–92%), aged 30 years and older (64.4%–71.7%), Pell Grant recipient (62%–81%), transfer status (95.4%–100%), continuous full-time enrollment (54.8%–61.5%), and degree completion or continued active status during the study (66.3%–69%). Differences found between the course delivery method groups included race and full-time or part-time status. Face-to-face students were mostly full time all the time (61.5%) and African American was the largest race/ethnic subgroup (48.5%). Online/hybrid students were split between full time, all the time and part time at least one term during the study period; the most prevalent race/ethnic subgroup was White (40.2%). Nonmajority or mixed course delivery students were slightly more full-time, all the time and the largest race/ethnic subgroup was African American (50%).

Table 8: Frequencies of variables by course delivery method, Southeast University

	Face-to-face[a]		Online[b]		Nonmajority[c]	
	Freq.	%	Freq.	%	Freq.	%
Gender						
Male	59	24.7	29	31.5	3	7.1
Female	180	75.3	63	68.5	39	92.9
Ethnicity						
White	48	20.1	37	40.2	8	19
African American	116	48.5	23	25	21	50
All other/unknown	75	31.4	32	34.8	13	31
Matriculation age (years)						
24–29	85	35.6	26	28.3	12	28.6
≥30	154	64.4	66	71.7	30	71.4
Pell Grant recipient						
Not a recipient	59	24.7	35	38	8	19
Recipient	180	75.3	57	62	34	81
Matriculation status						
Beginning undergraduate	11	4.6	0	0	0	0
Transfer student	228	95.4	92	100	42	100
Intensity of course taking						
Full time, all the time	147	61.5	45	48.9	23	54.8
Part time anytime	92	38.5	47	51.1	19	45.2
Stop out actions						
Continuous enrollment	147	61.5	53	57.6	23	54.8
Unregistered one or more terms	92	38.5	39	42.4	19	45.2

Table 8 (continued)

	Face-to-face[a]		Online[b]		Nonmajority[c]	
	Freq.	%	Freq.	%	Freq.	%
Remedial course work						
No remedial course work	N/A	N/A	N/A	N/A	N/A	N/A
One or more remedial courses	N/A	N/A	N/A	N/A	N/A	N/A
Persistence						
No degree, inactive	74	31	31	33.7	13	31
Degree completed or still active	165	69	61	66.3	29	69

[a]$n = 239$. [b]$n = 92$. [c]$n = 42$.

To better understand the online subgroup from the Southeast University sample, a follow-up request was made of the institution to provide summary data on the majors of the students. The largest portion, 34 students, or 37%, were psychology majors, followed by fire science (16 students, 17.4%) and criminal justice (12 students, 13%). Seven of the nine declared majors found among this subgroup are promoted on the Southeast University Web site for online education; in addition to the three previously mentioned, these included general business administration, birth–kindergarten education, nursing, and sociology.

As discussed earlier, logistic regression was utilized as the most suitable method due to purpose of the study, that is, to predict or explain relationships, and the binary nature of the dependent variable and other variables included in the study. Results of the analysis indicate that course delivery method ($b = -0.58$) is not predictive of persistence

among the sample from Southeast University; however, continuous enrollment (b = 4.58) was predictive of persistence, $p < .01$. The specified model is a reasonably good fit to the data with a chi-square value ($X^2(8) = 8.57$, p =0.38) that is not statistically significant. Cox and Snell and Nagelkerke R values are .47 and .66, respectively.

Continuous enrollment had a significant positive effect on persistence among nontraditional undergraduates at Southeast. Whereas 97% of students who were continuously enrolled earned a degree or remained continuously enrolled, only 26% of students who stopped earned a degree or remained enrolled. The odds of persistence among students who remained continuously enrolled were 97.48 times higher than the odds of persistence of those who stopped out. The exp(B) for continuous enrollment is a very strong result and consistent with other studies.

No other variables were found to have a significant association with persistence among the Southeast sample. Other variables with an odds ratio of greater than one, indicating a better likelihood of persistence, include students that are 30 years or older (1.12), transfer students (2.42), and Pell Grant recipients (1.8). See Table 9.

At Southeast University, themes from the qualitative analysis encompassed institutional funding and leadership to support the growth of nontraditional delivery of courses, meeting student needs, and enabling continued existence of programs and augmenting the quality of instruction. Although course delivery method was not found to be predictive of persistence through logistical regression analysis, continuous enrollment was. Finally, four variables had odds ratio results greater than 1.0, indicating a better likelihood of persisting among those students who were older, transfers, Pell Grant recipients, and continuous enrollment.

Table 9: Summary of binary logistic regression analysis for variables predicting persistence among nontraditional undergraduate students at Southeast University

Predictor	*B*	*SE*	Exp(*B*)	95% CI for exp(*B*)	
				Lower	Upper
Gender: Female	−0.08	0.43	0.92	0.39	2.16
Ethnicity					
African American	−0.02	0.46	0.98	0.40	2.42
All other/unknown	−0.07	0.41	0.93	0.42	2.06
Matriculation age: ≥30 years	0.12	0.37	1.12	0.55	2.32
Matriculation status: Transfer	0.88	0.94	2.42	0.38	15.19
Pell Grant recipient	0.59	0.41	1.80	0.80	4.02
First-year GPA	−0.075	0.18	0.93	0.65	1.32
Intensity of course taking: Part time, anytime	−0.25	0.35	0.78	0.39	1.56
Continuous enrollment	4.58**	0.44	97.48	40.80	232.94
Remedial courses: None	N/A	N/A	N/A	N/A	N/A
Course delivery					
Online or hybrid	−0.58	0.52	0.56	0.20	1.56
Nonmajority	−0.59	0.60	0.55	0.17	1.78
Constant	−0.399	0.77	0.67		

Note. $N = 373$. X (df) = 8.57 (8). Cox and Snell $R = .47$. Nagelkerke $R = .66$. Percentage persist = 68.4. GPA = grade point average.

*$p < .05$. **$p < .01$.

Cross-Case Analysis of Qualitative and Quantitative Results

Research Question 3

The purpose of the research study was to provide insight into the influence of course delivery method on persistence for nontraditional students at the selected universities by examining qualitative and quantitative data. Within-case analysis provided the opportunity to explore the possibility of contributory relationships between institutional context, course delivery method, and persistence among nontraditional students, resulting in a richer, more complete view of each university and its nontraditional students. After a brief description of each case, I will proceed with the cross-case analysis.

Two institutions of higher education, Rush University and Southeast University, were selected for study. Each is a 4-year research institution awarding degrees up to the doctoral level. Both institutions have a history of serving nontraditional students. Rush University serves nearly 23,000 undergraduates, most of whom are White, between the ages of 18 and 23 years, and enrolled full time. A large and increasingly traditional institution, nonetheless, the university supports nontraditional students through an umbrella office that delivers information, services, and programming with the needs of this student group in mind. Veterans and students returning to complete degrees have additional services and support designed to meet their unique needs as college students.

Undergraduate enrollment at Southeast University, a minority serving campus, is more than 5,000, with more than two-thirds enrolled full time. Split almost evenly between those aged under 24 years of age and those over, approximately three-quarters of the undergraduate population is nonresidential. Nontraditional students are aided in their

academic and extracurricular pursuits by a dedicated office at Southeast with both in-person and online information, services, and programming designed to support their success.

The third research question looks at the similarities and differences seen across the two institutions for greater understanding of the persistence outcomes among nontraditional students. Following separate analysis of the individual cases, cross-case analysis was conducted to identify and examine similarities and differences, observe any patterns yielded across the cases, and develop conclusions if the data support them. Results of the qualitative and quantitative data were compared across cases.

Institutional Context

Shared characteristics between Rush University and Southeast University include their history of distance education, which is a manifestation of their institutional purpose of meeting student needs, as well as measurable growth in online courses available to students. From its individual beginning, each institution has demonstrated a strong commitment to providing educational opportunity to learners in ways that enabled their persistence. Prior to the Internet age, both institutions offered courses off-site and outside of traditional hours to serve students whose needs did not fit the traditional model of undergraduate experience.

Whether measured in courses or student credit hours earned, there has been significant growth in online course availability at Rush University and Southeast University. The number of Rush University online courses grew 900% between Fall 2006 and Spring 2015; student credit hours earned via online courses grew 200% from 2008 to

2016. Over the study period, Southeast University's availability of sections of online courses grew 13% and student credit hours earned in the same time frame grew 61%.

Differences in institutional context focus on the role online and hybrid course delivery plays in the future of each university. At the same time that online and hybrid courses have grown at Rush University, there has been a strategic shift to focus on the traditional and residential student, the related college infrastructure, and associated experiences. Online and hybrid course delivery methods and nontraditional students are not critical to the institution's survival and growth in the same way as at Southeast University. In contrast, institutional informants at Southeast University view the development of online and hybrid courses as improving the teaching and learning experience, informing instructional progress, and contributing to academic achievement of all students. Furthermore, the continued existence of programs has been fueled by online and hybrid course delivery methods, making them essential to the institution's continued service to students.

Student Results

Student persistence at both universities was not found to be associated with the delivery method of the majority of their courses. The institutions did not share common variables found to be associated with student persistence, nor did they have the same variables with odds ratios above 1.0 to indicate an increased likelihood of persistence.

Both Rush University and Southeast University samples of nontraditional undergraduates were largely made up of transfer students who were enrolled part time for one term or more, continuously enrolled, and persisted (77% and 68%, respectively) over the 6-year study period. These persistence rates exceed by double-digits the persistence

rates of the undergraduate populations from which the samples were drawn and are well above rates of persistence among nontraditional students reported in the literature.

Across both institutions, the majority of the face-to-face subsample of both institutions were Pell Grant recipients. In both institutions, students taking a majority of online courses at both institutions were female and aged 30 years and older. Nonmajority students at both institutions were mostly female, aged 30 years and older, and Pell Grant recipients.

Differences found between Rush University and Southeast University student samples included gender mix, ethnic composition, and age distribution. Within the face-to-face subgroup, the mix of full time and part time varied between the two institutions. Online students differed on Pell Grant recipient status as well as mix of full time and part time. The nonmajority subsample of both institutions fell along similar percentages across all variables. See Table 10.

Table 10: Comparing the two cases

	Total sample (%)		Face-to-face (%)		Online (%)		Nonmajority (%)	
	Rush[a]	Southeast[b]	Rush[c]	Southeast[d]	Rush[e]	Southeast[f]	Rush[g]	Southeast[h]
Male	53.4	24.4	55.6	24.7	42.5	31.5	3.8	7.1
Female	46.6	75.6	44.4	75.3	57.5	68.5	96.2	92.9
White	54.5	24.9	53.8	20.1	77.5	40.2	42.3	19
African American	20.4	42.9	20.2	48.5	7.5	25	46.2	50
All other/unknown	25	32.2	26	31.4	15	34.8	11.5	31
24–29 years old	59.4	33	62.4	35.6	25	28.3	23.1	28.6

Table 10 (*continued*)

	Total sample (%)		Face-to-face (%)		Online (%)		Nonmajority (%)	
	Rush[a]	South east[b]	Rush[c]	South east[d]	Rush[e]	South east[f]	Rush[g]	South east[h]
≥30 years old	40.6	67	37.6	64.4	75	71.7	76.9	71.4
Not a recipient	40.9	27.3	39.4	24.7	72.5	38	38.5	19
Recipient	59	72.6	60.6	75.3	27.5	62	61.5	81
Beginning undergraduate	1	2.9	1	4.6	0	0	3.8	0
Transfer student	98.9	97.1	99	95.4	100	100	96.2	100
Full time, all the time	15.8	44.5	17.2	61.5	0	48.9	0	54.8
Part time anytime	84.2	55.5	82.8	38.5	100	51.1	100	45.2
Continuous enrollment	85	60	85.3	61.5	77.5	57.6	88.5	54.8
Unregistered one or more terms	14.9	40	14.7	38.5	22.5	42.4	11.5	45.2
No remedial course work	87.1	100	87.2	N/A	100	N/A	92.3	N/A
One or more remedial courses	12	0	12.8	N/A	0	N/A	7.7	N/A
No degree, inactive	22.6	31.6	22.2	31	22.5	33.7	34.6	31
Degree completed or still active	77.4	68.4	77.8	69	77.5	66.3	65.4	69

[a]n = 847. [b]n = 373. [c]n = 781. [d]n = 239. [e]n = 40. [f]n = 92. [g]n = 26. [h]n = 42.

This dissertation explored the relationship between persistence among nontraditional undergraduates and majority course delivery method, as well as other variables suggested in the literature as examined through regression analysis. A follow-on, additional statistical test, Chi-square test of independence, evaluated the association between persistence outcomes and majority course delivery method, the variables of interest in the study. This was an appropriate step to take because the quantitative data collected was observations or frequencies, as well as categorical in nature; i.e., persisted or not persisted, and the three course delivery methods. The chi-square test of independence found no significant relationship between these variables for the Rush University sample, $\chi^2(2, N = 847) = 2.24$, $p = .33$, and the Southeast University sample, $\chi^2(2, N = 373) = 0.24$, $p = .89$.

Chapter Summary

Nontraditional undergraduate student persistence represents a problem of practice across higher education. This research study sought insight into the issue of nontraditional student persistence through a case study involving the collection of both qualitative and quantitative data. Using a multiple case study approach, I examined the role course delivery method plays in persistence among nontraditional undergraduate students at two 4-year institutions to answer the research questions guiding this study:

1. What is the context of online and hybrid course delivery for nontraditional undergraduate students at each institution? That is, how are online and hybrid course delivery methods presented or described in institutional materials for nontraditional students, for example, policies and documents? How do these

institutions define online and hybrid course delivery methods? What proportion of courses is available to nontraditional students in an online or hybrid format, and how has availability changed in the past 10 years?

2. Taking into account background, life circumstances, and enrollment behavior, to what extent is course delivery method (majority online, majority hybrid, or majority traditional) predictive of persistence among nontraditional students at each institution?
3. What similarities and differences in context and student results can be seen across the two institutions?

The first two questions form the basis of the within-case qualitative and quantitative analyses, which included descriptive and thematic analysis of data gathered through interviews with institutional informants and examination of institutional documents as well as descriptive statistics and logistic regression.

At Rush University, the qualitative data yielded themes of increased availability, common definitions, and experiences of technology in teaching and learning, leading to like expectations among students and faculty, providing insight into the institutional environment. Programs rather than course delivery method and student populations are the focus of institutional marketing or growth strategies. The quantitative analysis did not find a predictive relationship between course delivery method and nontraditional student persistence; however, first year GPA, Pell Grant recipient, matriculation as a transfer student, and taking no remedial courses were positively associated with persistence at a statistically significant level.

At Southeast University, themes from the qualitative analysis encompassed institutional funding and leadership to support the growth of nontraditional delivery of courses, meeting student needs, and enabling continued existence of programs and augmenting the quality of instruction. Although course delivery method was not found to be predictive of persistence through logistical regression analysis, continuous enrollment was positively associated with persistence at a statistically significant level.

The third, and final, research question required comparison of the two cases. Commonalities between Rush University and Southeast University include a history of distance education as a means of meeting student needs and growth in online course availability. The samples drawn from the two institutions shared the following demographic characteristics: largely transfer students with a history of part-time enrollment, most of whom persisted throughout the 6-year study period. Demographic differences between the two samples included gender mix, age distribution, and ethnic composition. Rush is a primarily white institution while Southeast is a minority serving.

The role online and hybrid course delivery plays in the future of these two institutions appears to diverge. Southeast University looks at the development of online courses as fuel for continued operation and essential to future instructional improvements. At Rush University, while the growth in online courses is expected to continue, online and hybrid course delivery does not play a central role in the university's strategy for the future.

Finally, a follow-on exploratory analysis using the chi-square test of independence was conducted to examine whether persistence was dependent on course

delivery method. Results of the chi-square analysis were not statistically significant for either institution.

CHAPTER 5: SUMMARY AND DISCUSSION

As previously mentioned, this study explored the relationship between course delivery method and persistence among nontraditional students. The final chapter of the dissertation restates the research problem and reviews the major methods used in the study. The chapter concludes with a summary of the results, discussion of their implications, and suggestions for additional research.

Statement of the Problem

Persistence toward degree completion is a desired outcome of higher education for all stakeholder groups; individual students, institutions, businesses, and society-at-large share this mutual interest, albeit for differing reasons. However, individual and collective persistence remain a relentless challenge for these stakeholders. Moreover, persistence rates are much lower among nontraditional undergraduates than among their traditional counterparts, with double-digit gaps reported in numerous studies since 1995.

In chapter 2, I reviewed research that examined numerous factors explaining the low persistence rates among nontraditional students. These have included individual student characteristics such as employment, academic preparation, and having dependents, as well as institutional factors like accommodations in student services and nonacademic programming to better assist nontraditional undergraduates. Additionally, I presented several models of nontraditional student persistence developed by scholars

(Bean & Metzner, 1985; Kember, et al., 1994; Atwell, et al, 2011; Falcone, 2011; Shea and Bidjerano, 2014).

Nontraditional student persistence in relation to factors that are within a given institution's direct control, for example, what is taught, how, and when, is limited and represented a gap in the literature, which has consequences for both institutions and individual students. This dissertation presented a research study juxtaposing the persistence results of nontraditional students with one of the "levers" available to an institution, specifically, how a course is delivered, intending to provide insight into and understanding of this critical issue in higher education.

Review of the Methodology

As explained in chapter 3, the research, utilizing Yin's (2014) design of a multiple case study with embedded unit of analysis, examined the role course delivery plays in persistence among nontraditional undergraduates at two 4-year institutions. Interviews with institutional officials and document review provided data on the environment of each institution, including policies and practices focusing on nontraditional students, online and hybrid course delivery methods, and changes in online and hybrid course delivery over the last 10 years that may have affected nontraditional students. Data sets from the institutions provided data on student enrollment behavior, background characteristics, and life circumstances for statistical analysis of course delivery method and persistence among nontraditional students. Binomial logistical regression was employed to examine what, if any, relationship existed between nontraditional student persistence and course delivery method in these two institutions during the study period.

Qualitative and quantitative results from the case studies were analyzed individually and then compared via cross-case analysis for further insight into the role course delivery method may play in nontraditional student persistence. In combination, the institutional context and student outcomes provided descriptive and explanatory data, allowing for exploration of contributory relationships, resulting in a richer, more complete view of the two universities and their nontraditional students.

Summary of the Results

The research study involved two cases to provide the prospect of more robust findings and to allow for cross-case analysis. Findings and results from multiple institutions added to our understanding of online and hybrid course delivery and nontraditional undergraduate students.

Rush University is a public institution located in the southeast region of the United States, serving over 25,000 students at the undergraduate and graduate levels on average over the study period. Nontraditional students (24 years and older) represented approximately one quarter of undergraduates during the six-year study period. At Rush University, the qualitative data yielded themes that provided insight into the institutional environment: increased availability of online and hybrid course delivery methods, common definitions of online and hybrid course delivery methods, and experiences of technology in teaching and learning leading to like expectations among students and faculty. Degree programs rather than course delivery method and student populations are the focus of institutional growth strategies. The quantitative analysis did not find a predictive relationship between course delivery method and nontraditional student persistence; however, four other variables were associated with persistence: first-year

GPA ($b = 0.64$; $p < .01$), Pell Grant recipient status ($b = -0.075$; $p < .01$), transfer matriculation status ($b = -2.25$; $p < .05$), and taking no remedial courses ($b = 0.92$; $p < .05$). The odds of persistence were higher among students with higher first-year GPA (1.9) and those who did not take remedial courses (2.52). Odds ratio of persisting for other significant variables were well below 1.0: received a Pell Grant (0.47) and transferred into Rush (0.11), The odds ratio for gender – female, online or hybrid course delivery, and nonmajority course delivery variables were all above 1, indicating an increase in the odds of persisting versus the reference variable. Results of the chi-square test indicated a reasonably good fit of the model to the data.

Southeast University, serving approximately 6,000 undergraduate and graduate students, is in the southeastern United States. Roughly half of the undergraduate population is nontraditional (24 years and older). At Southeast University, themes from the qualitative analysis encompassed institutional funding and leadership to support the growth of nontraditional delivery of courses, desire to meet student needs through online and hybrid course delivery, and a perception that online and hybrid course delivery had enabled the continued existence of programs and augmented the quality of instruction provided to students. Administrators' comments in the study suggest a cross-pollination occurring as the development of online courses contribute to better course design across all methods of delivery. These are consistent with a national perspective among the majority of higher education leaders shared in the annual report from the Online Learning Consortium (Allen & Seaman, 2015), in which the value of online learning continues to be an increasingly important element in long-term academic strategy.

Although course delivery method was not found to be predictive of nontraditional student persistence at Southeast University through logistical regression analysis, continuous enrollment was ($b = 4.58$; $p < .01$). Chi-square results indicated a reasonably good fit of the model to the data. Continuous enrollment had a significant effect on persistence among nontraditional undergraduates at Southeast. The odds of persistence among students who remained continuously enrolled were 97.48 times higher than the odds of persistence of those who stopped out at least once. Finally, three other variables had odds ratio results greater than 1.0, indicating increased odds of persisting versus the reference variable: students who were aged 30 years or older, transfers, and Pell Grant recipients.

Following separate analysis of the individual cases, cross-case analysis was conducted to identify and examine similarities and differences, observe any patterns yielded across the cases, and develop conclusions if the data support them.

Qualitative data analysis revealed shared characteristics between Rush University and Southeast University, including their history of distance education, which is a manifestation of their institutional purpose of meeting student needs, as well as measurable growth in online courses available to students. From its individual beginning, each institution has demonstrated a strong commitment to providing educational opportunity to learners in ways that enabled their persistence. Prior to the Internet age, both institutions offered courses off-site and outside of traditional hours to serve students, whose needs did not fit the traditional model of undergraduate experience. In the decade between 2006 and 2016, each institution saw meaningful increases in online courses,

following increased funding to support their development, whether measured by quantity of course sections or by number of student credit hours.

Differences in institutional context focus on the role online and hybrid course delivery plays in the future of each university. At the same time that online and hybrid courses have grown in number at Rush University, there has been a strategic shift to focus on the traditional and residential student, the related college infrastructure, and associated experiences. On the other hand, online and hybrid course delivery and nontraditional students are seen as critical to survival and growth at Southeast University, improving the teaching and learning experience, informing instructional progress, contributing to academic achievement of all students, and sustaining programs.

Quantitative data analysis indicated that both Rush University and Southeast University samples of nontraditional undergraduates were largely made up of transfer students who were enrolled part time for one term or more, continuously enrolled, and persisted over the 6-year study period. Nontraditional first time beginning and transfer undergraduates had six-year persistence rates well above that of the populations from which they were drawn. At Rush University, the nontraditional sample persistence rate was 77% versus 57% for the total; the difference at Southeast was even more pronounced with the sample persistence rate of 68% versus 35% for the total. These two samples' persistence rate not only exceeded that of their institutional population but also persistence rates generally among nontraditional students, often reported below 50%.

The differences found between Rush University and Southeast University student samples were suggestive of their institutional demographics. Rush was primarily white, with a younger population, roughly split evenly between males and females. On the other

hand, the sample from Southeast was made up of more students of color, students thirty years and older, and females.

Binary logistic regression revealed that student persistence at both universities was not associated with the delivery method of the majority of their courses. Moreover, variables associated with persistence differed between the two institutions. Finally, there were no common variables among the two cases with odds ratios greater than 1.0 to indicate an increased likelihood of persistence.

A follow-on exploratory analysis using the chi-square test of independence was conducted to examine whether persistence was dependent on course delivery method. Results of the chi-square analysis were not statistically significant for either institution.

Discussion of the Results

The research study presented in this dissertation was intended to provide insight into the influence of course delivery method on persistence of nontraditional students at two institutions by examining both qualitative and quantitative data. By combining institutional context and student outcome data, a more complete view of the institutions and their nontraditional students could be described and explained. The final step of cross-case analysis provided the opportunity for comparison.

Research Question 1

Data gathered from institutional informants' responses to the first question, focusing on institutional context, discloses how different the two universities' views of nontraditional students and nontraditional delivery are. Although both have histories of serving the nontraditional population and utilizing unconventional means to deliver education, the futures of these two institutions appear different. Both universities have

demonstrated a commitment to growing online and hybrid courses over recent decades in order to serve all students. However, their strategies toward nontraditional students have become increasingly dissimilar. Rush University appears to have strategically pivoted toward the traditional undergraduate population in the last decade, whereas Southeast continues with a strong focus on serving nontraditional undergraduates.

A possible explanation of this divergence in student population may be found in the surrounding communities of Rush and Southeast universities. Southeast University is in a less populous area of its state with growth projected in low single digits. On the other hand, Rush University is in the fastest growing county of its state, expected to grow by nearly half in the next two decades. Such a dramatic growth in population is likely a factor in the choices made by Rush University to focus resources on increasing its capacity to attract and serve the traditional undergraduate population.

At both institutions, which are each public, growth and development of hybrid and online courses rely heavily on funding and faculty, which go hand in hand. Without funding support during the development period, faculty may not be interested in investing the time and effort required for online delivery of course content. Without faculty to create content, funding for the technology, infrastructure, and instructional design, support may not be optimally leveraged for the benefit of students and the institution as a whole. Southeast and Rush universities have lost the initial state government funding that supported development of hybrid and online courses for their institutions; however, growing enrollment in hybrid and online sections likely represents another source of funding for development and availability of alternatives that meet student needs.

Both institutions' reliance on marketing outreach that is programmatic, for example, academic content or degree, in focus to reach nontraditional students, rather than delivery method or student population, indicates the secondary nature of these constructs to marketing strategy. Such a strategy is indicative of an industry not yet mature in its approach to marketing and driven by internal priorities rather than marketplace needs. This may also suggest that growth and development of nontraditional delivery methods depend more on internal constituencies rather than on external audiences and available technology. Faculty are the academic content experts or product owners in the academy; their acceptance, utilization, and development of courses that leverage the benefits available from online and hybrid methods are key to accelerating the growth of online and hybrid course delivery at these two institutions.

Research Question 2

I advanced the association between nontraditional student persistence and course delivery method after reviewing literature featuring one or more of these constructs. Typically, research has looked at these constructs, that is, persistence, nontraditional undergraduates, and course delivery method, separately; it has occasionally considered two of them but rarely all three together. For example, two studies mentioned in the literature review addressed persistence in the context of nontraditional students and distance learning. Thompson (2001) surveyed nontraditional students in a distance education course, finding positive perceptions among the students based on opportunity, access, and the effectiveness of the learning experience; the authors concluded distance education was important for these students' degree completion. Pontes and Pontes (2012b), using NPSAS 2008 data, researched nontraditional undergraduate enrollment

gaps, finding lower probability of stop out among those enrolled in distance education; the authors results suggested distance education contributed to improved degree progress rates among nontraditional students.

Shea and Bidjerano (2014) saw institutional response or adaptation as a missing element in previous models of student persistence, recognizing that not all change in higher education occurs solely at the student level. Their study results showed how institutional modification, including course delivery methods, are part of the student experience, potentially influencing the persistence outcomes, leading the authors to add to Falcone's (2011) model. See Figures 1 and 2. With this in mind, my study included course delivery method, a means by which institutions have adapted and responded to students, along with other variables outside institutional control, such as gender and matriculation status.

On the central question of the quantitative analysis, there was consistency of results between Rush University and Southeast University: The binary logistic regression did not support my original non-directional hypothesis that course delivery method may be associated with persistence among nontraditional students at the two institutions; nor did the follow-up chi-square test of independence.

Factors that may have affected the results of the current study include the following: (a) the low proportion of students taking a majority of online/hybrid courses in each institution, (b) the relatively short history of online/hybrid course delivery across higher education and at these two institutions, and (c) limited availability of online/hybrid courses and/or programs during the study period. With expanded availability, increased

levels of comfort with newer delivery methods among nontraditional students, and time, one may see increased association with persistence.

The variables associated with nontraditional undergraduate persistence and those with odds ratios greater than 1.0 were completely unique to each institution. Persistence outcomes at these two institutions were affected by quite different factors and do not provide support for generalization. The Southeast University sample had a single variable with statistically significant association with persistence: continuous enrollment (b = 4.58; $p < .01$). In addition, the odds of students who remained continuously enrolled persisting are 97.48 greater than the odds of students who stop out.

Persistence toward degree completion at Rush University was positively associated at a statistically significant level with college enrollment variables including first-year GPA and taking no remedial courses. The positive feedback by way of first-year GPA is likely to provide motivation to students. Students not needing remediation may have a stronger foundation for returning to the classroom.

The persistence rate among the samples drawn from Rush and Southeast Universities are well above that of the total population from which they are drawn, +20 points and +33 points, respectively. These results invite a discussion of what is different in the characteristics, experience, or behavior of nontraditional students in the sample. As previously discussed, both samples were mostly made up of transfer students, as well as students who enrolled at least one term on a part-time basis. Having completed coursework and gaining confidence in one's academic ability by earning credit is a likely motivator for persistence toward degree completion. Students who enroll part-time may

be doing so to get or keep employment; the job could motivate persistence, providing financial support or incentive toward advancement in a career.

Research Question 3

Cross-case analysis of these two institutions showed them to be far more different than alike and yielded no results of statistical significance and limited results with practical application. The institutions share a historical commitment to distance education as a means of supporting student success, and both have grown the number of offerings of online and hybrid courses available to their students. In both institutions, the majority of student persisted over the study period with continuous enrollment, as one might expect of persisters; the samples were each largely made up of transfer students enrolled part time for at least one term.

On the other hand, within-case analysis, combining insight from the qualitative data with quantitative results, does yield some insight as to the interplay between the institutional environment and the student outcomes at each university.

Data from the qualitative research at Southeast University, particularly around the topic of meeting student needs, appear to synchronize with the quantitative results of the study. Institutional informants spoke of a strong institutional commitment to meeting student needs, which included developing alternative delivery methods over many decades because their students' lives required it. While it was not included in the quantitative data collected, the institutional informants indicated the presence of active military personnel among the student population. Demographic analysis of the Southeast sample shows the majority of students having nontraditional or underrepresented characteristics beyond age, such as female, ethnic/racial minority, and part-time status at

some point during the study period. These characteristics may indicate an increased need for the type of flexibility and access that online and hybrid course delivery provides; data from the institutional informants would indicate an intention to meet this need. The examples provided by informants included 8-week courses to ensure military personnel the ability to start and complete prior to deployment, as well availability of courses off-campus and online/hybrid courses. It may be that attention to student needs and flexibility are more critical to supporting nontraditional students' persistence toward degree than the specific course delivery method.

A key result of the quantitative analysis of Rush University data, a higher odds ratio of majority online/hybrid or nonmajority persisting when compared to majority face-to-face students, provides an interesting outcome to consider in light of the increases in availability of online sections and student credit hours earned via online courses. Perhaps having more courses/sections available in alternative delivery formats contributes to the increased odds ratios found among nontraditional students in these subgroups.

It is important to note that persistence, continued enrollment or degree completion, among nontraditional undergraduates are at high levels at both Rush University and Southeast University, at 77% and 68%, respectively. By way of comparison, studies discussed in the literature review showed persistence results for nontraditional students at 50% or less. Furthermore, at Rush University the persistence rate for the 2009 class after six years is 57%, and 35% at Southeast. Nontraditional students persisted at rates well above their traditional counterparts in both, and above that typically found amongst this population. Qualitative data collected from institutional

informants suggests these two institutions did not rely on a single strategy to achieve these strong results, but rather reflect changes made over time and across functions on their campus to support access and persistence to degree among their nontraditional students.

Implications for Practitioners

This and other studies have shown little evidence that a single strategy leads to significantly improved outcomes for nontraditional students. On the contrary, this study supports the notion that multiple strategies, specifically flexible enrollment policies, academic and administrative leadership, and financial aid, lead to positive outcomes, including persistence toward degree completion, for nontraditional students. This study echoes others such as Falcone (2011) and Shea and Bidjerano (2014) in suggesting that college-wide efforts are needed to support the range of characteristics that contribute to nontraditional undergraduate student persistence.

Findings from this study suggest that continuous enrollment, academic advisement, and financial aid services are key for nontraditional student success. Institutions committed to nontraditional student success, like Southeast and Rush, have bundled services in dedicated offices to create a single point of contact, in order to meet academic and other needs unique to this population. Understanding that background characteristics and life circumstances influence the academic experience and performance of these students informs the strategies employed by both.

Continuous enrollment was associated with persistence at Southeast. Such results grow out of institutional strategies rooted in a philosophy of meeting students where they are. In the case of continuous enrollment, the Southeast offered flexible enrollment

policies to the student who required accommodation related to timing and place, demonstrating an appreciation for the nontraditional student's environmental press, and a response that is agile and appropriate.

Although the quantitative analysis did not support my assertions around course delivery method and nontraditional student persistence, on a practical level, the development of alterative course delivery methods is in keeping with the kind of college-wide strategy designed to meet students where they are. The strategies discussed thus far only support student success if the student is able to access higher education. In the case of nontraditional students, life circumstances, for example, work or family responsibilities, may limit access to traditional face-to-face courses. Institutions deploying technology to enable students, including nontraditional students, to access courses is another means of supporting their success.

Suggestions for Additional Research

Recalling the study of scholarly literature by Donaldson and Townsend (2007), I reiterate that more research on nontraditional students is warranted; they make up a significant, growing portion of the college-going population and the results of this study suggest that factors of their background and current life circumstances influence their persistence outcomes. Understanding nontraditional students' complex realities as they present themselves on campus is a first step in the process of developing institutional support services. Nontraditional students' eventual success relies on a multi-faceted, cross-campus set of institutional strategies from which each student is able to find the best array for their circumstances.

Although the regression results of this study failed to confirm a statistical association between nontraditional delivery methods and nontraditional student persistence at these two institutions, the future of higher education will continue to include all three constructs and should continue to be studied, whether individually or collectively. Rush and Southeast have developed and offered online and hybrid courses for fewer than 20 years; in both instances, the majority of the degree programs and course offerings remain exclusively face-to-face. Results may be different at other institutions due to a variety of factors including, but not limited to, nontraditional student numbers, institutional control, geographic location, online and hybrid delivery strategy, length of time providing online and hybrid courses, and availability of online and hybrid courses across the curriculum.

In retrospect, the study I conducted would have been enhanced through the inclusion of data collected from individual students and other types of institutional informants such as faculty and those in student support services. Faculty and student support services professionals would bring different lenses to the institutional perspective, based on their responsibilities and interactions with students. Interviews or surveys among sub-groups of students, e.g. persisters, continuously enrolled, transfer students, may have provided explanation and description to further understand the decisions and ultimate outcomes they experienced. A follow-on study of the same institutions would address these areas and add to the value of this study.

Additional topics for future research suggested, but not explored, by this study could focus on continuous enrollment which was associated with persistence among the nontraditional students at Southeast. The influence of continuous enrollment could be

explored through qualitative research with students and institutional informants to examine the factors supporting this behavior and preventing stopping out. The strong rate of persistence at each institution could be explored through additional survey research among the student sample in particular, the transfer and part-time enrollment sub-groups, to better understand which characteristics, experiences, or behaviors supported their persistence. Research among informants for institutional context could be extended to include faculty and other staff not represented in the current study. Finally, analyzing the persistence outcomes of nontraditional students in shortened courses (8 weeks instead of 16) and other responses to nontraditional student needs might help to further refine and support Shea and Bidjerano's (2014) model of institutional adaptation.

The study, using multiple case methodology, could be replicated among institutions in other geographies or different types of control, e.g. private not for profit or for-profit. Understanding nontraditional student persistence in a variety of settings enhances the ability of higher education to meet their needs and support their success.

Summary

This dissertation study investigated the association of course delivery method with persistence of first-time beginning and transfer nontraditional undergraduate students at two universities over a 6-year period (2009–2015). Research exists on nontraditional undergraduates (varying definitions), nontraditional instructional methods/delivery, and persistence among college students; however, most research does not combine these constructs in the way this dissertation has. Relatively little research has been done to understand nontraditional students' persistence and the factors that influence it (Bailey, 2005; Donaldson & Townsend, 2007). Since the 1970s, the

population of students aged 25 years and older has risen nearly 300%, totaling 6.5 million in 2011 and representing 42.3% of enrollment ("Condition of Education," 2011). In contrast, Donaldson and Townsend (2007) reviewed seven scholarly journals over a 13-year period, finding only 41 out of 3,219 articles focused on adult or nontraditional students; of these, only 15 articles, or 0.46%, addressed student retention or academic success of adult students.

Persistence among nontraditional undergraduates is affected by myriad other/additional factors at the individual, institutional, and environmental levels. These include those identified as part of the "environmental press" in Bean and Metzner's student attrition model, background or life circumstance variables, enrollment behaviors, academic and social integration, and cost–benefit or rational choice (Attewell et al., 2011; Bean & Metzner, 1985; Cabrera et al., 1992; Cabrera et al., 1993; Metzner, 1987; Ruot, 2013; St. John et al., 2000).

Understanding individual and environmental factors that support or detract from nontraditional students' ability to persist in pursuit of their educational goals is critical to institutions serving those students and to their leadership. Colleges and universities have been able to make accommodations in student services and other nonacademic programming to better assist nontraditional undergraduates. These initiatives largely focus on factors outside the direct control of colleges and universities and have had limited impact on students' persistence to degree completion, as evidenced by the sustained low rates of graduation among this population. Research into the issue of nontraditional student persistence examining key factors in the equation that are within a

given institution's direct control—what is taught, how, and when—is limited and represented a gap in the research affecting both institutions and individual students.

As a multifaceted problem of practice, nontraditional student persistence challenges higher education institutions across the United States. This multiple case study looked at the issue through the lens of the institution, focusing specifically on course delivery method and its influence on persistence among nontraditional students. Qualitative research in the form of interviews with administrators and document review provided the context, informing our understanding of the institutional perspective and the environment in which a specific nontraditional student behavior, that is, persistence, occurred. Embedded quantitative analysis, via binomial regression, was used to understand what, if any, relationship exists between nontraditional student persistence and course delivery method in these two institutions during the study period.

Two 4-year, public research universities in the southeastern United States provided the cases for this study. Each has historically served nontraditional students. The institutions' policies, procedures, and intentions with respect to online and hybrid course delivery were juxtaposed with nontraditional student outcomes to form a more complete understanding of persistence and completion among this large and growing population in higher education. After I analyzed each institution independently, I conducted a cross-case analysis to determine replication or contrast between the cases.

This research study sought insight into the issue of nontraditional student persistence through a case study involving the collection of both qualitative and quantitative data. Using a multiple case study approach, I examined the role course

delivery method plays in persistence among nontraditional undergraduate students at two 4-year institutions to answer the research questions guiding this study:

1. What is the context of hybrid and online course delivery for nontraditional undergraduate students at each institution? That is, how are online and hybrid course delivery methods presented or described in institutional materials for nontraditional students, for example, policies and documents? How do these institutions define online and hybrid course delivery methods? What proportion of courses is available to nontraditional students in a nontraditional format, and how has availability changed in the past 10 years?
2. Taking into account background, life circumstances, and enrollment behavior, to what extent is course delivery method (majority online, majority hybrid, or majority traditional) predictive of persistence among nontraditional students at each institution?
3. What similarities and differences in context and student results can be seen across the two institutions?

The first two questions form the basis of the within-case qualitative and quantitative analyses, which included descriptive and thematic analysis of data gathered through interviews with institutional informants and examination of institutional documents as well as descriptive statistics and logistic regression.

At Rush University, the qualitative data yielded themes of increased availability, common definitions, and experiences of technology in teaching and learning, leading to like expectations among students and faculty and providing insight into the institutional environment. Programs rather than course delivery method and student populations are

the focus of institutional marketing or growth strategies. The quantitative analysis did not find a predictive relationship between course delivery method and nontraditional student persistence; however, four other variables were associated with persistence (matriculation as a transfer student, Pell Grant recipient, first year GPA, and taking no remedial courses).

At Southeast University, themes from the qualitative analysis encompassed institutional funding and leadership to support the growth of nontraditional delivery of courses, meeting student needs, and enabling continued existence of programs and augmenting the quality of instruction. Although course delivery method was not found to be predictive of persistence through logistical regression analysis, continuous enrollment was.

The third, and final, research question required comparison of the two cases. Commonalities between Rush University and Southeast University included a history of distance education as a means of meeting student needs and growth in online course availability. The samples drawn from the two institutions shared the following demographic characteristics: largely transfer students with a history of part-time enrollment who persisted throughout the 6-year study period.

A follow-up exploratory analysis using the chi-square test of independence was conducted to examine whether persistence was dependent on course delivery method, finding no statistically significant results for either institution.

Demographic differences between the two samples included gender mix, ethnic composition, and age distribution. The role played by online and hybrid course delivery method in the future of these two institutions also differed. Southeast University looks at

the development of online courses as fuel for continued operation and as essential to future instructional improvements, whereas at Rush University, although the quantity of online and hybrid courses has grown, online and hybrid course delivery does not play the same part in the university's strategy for the future.

The focus of this study on nontraditional students' persistence and nontraditional delivery methods was warranted given the substantial presence of these students in higher education and the labor force changes mandating ongoing, even lifetime, learning to be successful in the U.S. economy. Higher education is in the midst of great change; all elements—who, what, how, when, and where—of institutional strategy are undergoing transformation, informed by students with a customer mentality and enabled by technology. This dissertation study adds to research in the following ways: (a) including institutional lens; (b) considering course delivery method as a factor in persistence; (c) focusing on how to support persistence rather than preventing attrition; (d) adding evidence to the importance of multiple, cross-campus strategies that are flexible and responsive to student needs; and (e) focusing exclusively on nontraditional students.

Nontraditional undergraduates are a meaningful population in higher educational institutions across the United States. However, the majority of research either excludes them completely or does not differentiate sufficiently in order to tease out their unique needs, characteristics, etc. Studies cited earlier in this dissertation demonstrate the paucity of research on this large and growing group of students. This dissertation added to research on nontraditional students by looking at factors that may be associated with persistence.

The institutional lens is included through the interviews with institutional personnel. Existing research on the persistence of nontraditional students has not typically included the perspective of the institution. The decision to persist or withdraw is not made in isolation but in the institutional environment. Examining the context in which the behavior occurs provides a more complete understanding of the nontraditional student persistence and the factors that surround, and possibly influence, the outcome.

Course delivery method were considered as a factor in persistence. Research comparing the effect of course delivery type on nontraditional student persistence is scarce. Most research measures student learning and compares effectiveness between types of delivery in student learning or the attrition rates from courses delivered by nontraditional methods. By including all types of course delivery in an analysis of persistence, this research focused on understanding the association between the two constructs in the nontraditional student populations of these two institutions.

The study provides a contrast to the deficit, i.e. drop out, perspective often taken with the topic of attrition/persistence. Much of the available research is designed to identify characteristics that negatively influence student success, stemming from seminal studies in the field, including Tinto (1975) and Bean & Metzner (1985). More research situated in the positive perspective of persistence may balance institutions' strategies with constructive or affirmative input.

The study suggests that multiple parts of the institution are involved in supporting nontraditional student success. Results of this and similar studies may serve to enlighten college and university faculty and staff who are on the front line of preparing for and serving the nontraditional undergraduate.

REFERENCES

Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracking online education in the United States*. Babson Park, MA: Babson Survey Research Group and Quahog Reserach Group.

Allen, I. E., & Seaman, J. (2015). *Grade level: Tracking online education in the United States*. Babson Park, MA: Babson Survey Research Group.

Allen, I. E., Seaman, J., & Garrett, R. (2007). *Blending in: The extent and promise of blended education in the United States*. Newburyport, MA: Sloan Consortium.

Attewell, P., Heil, S., & Reisel, L. (2011). Competing explanations of undergraduate noncompletion. *American Educational Research Journal, 48*, 536–559.

Bailey, T. R. A. M. (2005). *Paths to persistence: An analysis of research on program effectiveness at community colleges*. Indianapolis, IN: Lumina Foundation for Education.

Bates, T. (1993). Theory and practice in the use of technology in distance education. *Theoretical Principles of Distance Education*, *13*, 213–233.

Baum, S., Ma, J., & Payea, K. (2010). *Education pays 2010: The benefits of higher education for individuals and society*. Retrieved from trends.collegeboard.org/education-pays

Baum, S., Ma, J., & Payea, K. (2013). *Education pays 2013: The benefits of higher education for individuals and society*. Retrieved from trends.collegeboard.org/education-pays

Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research, 55*, 485–540.

Berge, Z. L., & Huang, Y.-P. (2004). A model for sustainable student retention: A holistic perspective on the student dropout problem with special attention to e-learning. *DEOSNEWS, 13*, 1–26.

Berger, J. B., & Milem, J. F. (1999). The role of student involvement and perceptions of integration in a causal model of student persistence.*Research in higher Education*, *40*(6), 641-664.

Berker, A., Horn, L., & Carroll, C. D. (2003). *Work first, study second: Adult undergraduates who combine employment and postsecondary enrollment*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

Blankson, J., & Kyei-Blankson, L. (2008). Nontraditional students' perception of a blended course: Integrating synchronous online discussion and face-to-face instruction. *Journal of Interactive Learning Research, 19*(3), 421.

Bourdieu, P. (1977). *Outline of a theory of practice*. Retrieved from EBSCOhost database.

Brown, S. M. (2002). Strategies that contribute to nontraditional/adult student development and persistence. *PAACE Journal of Lifelong Learning, 11*, 67–76.

Buglione, S. M. (2012). *Nontraditional approaches with nontraditionals students: Experiences of learning, service and identity development* (EdD doctoral dissertation). University of Massacusetts, Boston.

Cabrera, A. F., Castaneda, M. B., Nora, A., & Hengstler, D. (1992). The convergence between two theories of college persistence. *Journal of Higher Education, 63*(2), 143–164.

Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *Journal of Higher Education, 64*(2), 123–139.

Calcagno, J. C., Crosta, P., Bailey, T., Jenkins, D., & Columbia University. (2006). *Stepping stones to a degree: The impact of enrollment pathways and milestones on older community college student outcomes* (CCRC Brief No. 32). New York, NY: Community College Research Center, Columbia University.

Carnevale, A. P., Rose, S. J., & Ban, C. (2011). *The college payoff: Education, occupations, lifetime earnings*. Washington, DC: Georgetown University, Center on Education and Workforce.

Carnevale, A. P., Smith, N., & Strohl, J. (2010). *Help wanted: Projections of job and education requirements through 2018*. Indianapolis, IN: Lumina Foundation.

Carriuolo, N. (2002). The Nontraditional Undergraduate and Distance Learning Is Higher Education Providing a Portal or Just a Keyhole to Social and Economic Mobility?. *Change: The Magazine of Higher Learning, 34*(6), 56-62.

Cavote, S. K.-F. K. (2007). Non-traditional student persistence and first year experience courses. *Journal of College Student Retention: Research, Theory, and Practice, 8*, 477–489.

Choy, S. (2002). *Nontraditional undergraduates: Findings from the condition of education, 2002*. Washington, DC: National Center for Education Statistics.

Christensen, C. M., Horn, M. B., Caldera, L., & Soares, L. (2011). *Disrupting college: How disruptive innovation can deliver quality and affordability to postsecondary education*. San Mateo, CA: Innosight Institute.

Cohen, A. M., & Kisker, C. B. (2010). *The shaping of American higher education* (2nd ed.). San Francisco, CA: Jossey-Bass.

Condition of education. (2011). Retrieved from nces.ed.gov/programs/coe/tables/table-dai-1.asp

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.

Donaldson, J. F., & Townsend, B. K. (2007). Higher education journals' discourse about adult undergraduate students. *Journal of Higher Education, 78*, 27–50.

Dowd, A. C., & Coury, T. (2006). The effect of loans on the persistence and attainment of community college students. *Research in Higher Education, 47*, 33–62.

Drucker, P. F. (1985). The discipline of innovation. *Harvard Business Review, 63*(3), 67–72.

Falcone, T. M. (2011). *Toward a new model of student persistence in higher education*. Unpublished mauscript.

Feilzer, M. Y. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research, 4*(1), 6–16.

Garrison, D. R. (2011). *E-learning in the 21st century: A framework for research and practice*. New York, NY: Taylor and Francis.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education, 7*(2), 95–105.

Gay, L., Mills, G., & Airasian, P. (2009). *Educational research* (9th ed.). Upper Saddle River, NJ: Pearson.

General Accounting Office. (2002). Distance education: Growth in distance education programs and implications for federal education policy. Retrieved from gao.gov/new.items/d021125t.pdf

Hagelskamp, C., Schleifer, D., & DiStasi, C. (2013). Is college worth it for me? How adults without degrees think about going (back) to school. Public Agenda.

Hamilton, D. (1990). *Learning about education: An unfinished curriculum*. New York, NY: McGraw-Hill International.

Harrington, C. F., Gordon, S. A., & Schibik, T. J. (2004). Course management system utilization and implications for practice: A national survey of department chairpersons. *Online Journal of Distance Learning Administration, 7*(4).

Hearn, J. C., & Holdsworth, J. M. (2004). Federal student aid. In E. P. St. John & M. D. Parsons (Eds.), *Public funding of higher education: Changing contexts and new rationales* (pp. 40–59). Baltimore, MD: Johns Hopkins University Press.

Heller, D. E., & Rogers, K. R. (2006). Shifting the burden: Public and private financing of higher education in the United States and implications for Europe. *Tertiary Education & Management, 12*(2), 91–117.

Higher Education Opportunity Act. (1965). Public Law 110-315.

Holmberg, B. (1986). *Growth and structure of distance education*. London, England: Croom Helm.

Horn, L. J., & Carroll, C. D. (1996). *Nontraditional undergraduates: Trends in enrollment from 1986 to 1992 and persistence and attainment among 1989–90 beginning postsecondary students*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.

Huck, S. W. (2012). *Reading statistics and research*. Boston, MA: Pearson.

Jaggars, S. S., & Xu, D. (2010). *Online learning in the Virginia Community College System.* Retrieved from ccrc.tc.columbia.edu/media/k2/attachments/online-learning-virginia.pdf

Jepsen, C., & Montgomery, M. (2012). Back to school: An application of human capital theory for mature workers. *Economics of Education Review, 31*(1), 168–178. doi:10.1016/j.econedurev.2011.10.005

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7), 14–26.

Keegan, D. (1996). *Foundations of distance education*. New York, NY: Psychology Press.

Kember, D., Lai, T., Murphy, D., Siaw, I., & Yuen, K. S. (1994). Student progress in distance education courses: A replication study. *Adult Education Quarterly, 45*(1), 286–301. doi:10.1177/0741713694045001003

Knowles, M. S. (1989). Adult learning: Theory and practice. In *The handbook of human resource development* (p.2). New York, NY: John Wiley & Sons.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development* (Vol. 1). Englewood Cliffs, NJ: Prentice Hall.

Levy, Y. (2007). Comparing dropouts and persistence in e-learning courses. *Computers & Education, 48,* 185–204. doi:10.1016/j.compedu.2004.12.004

Maxfield, R. J. (2008). Online education for nontraditional adult students: Perceptions and attiudes of emergency services workers in asynchronous learning environments. Digital Commons@ USU. Retrieved from digitalcommons.usu.edu/etd/114

Mayadas, A. F., Bourne, J., & Bacsich, P. (2009). Online education today. *Journal of Asynchronous Learning Networks, 13*(2), 49–56.

McAuley, A., Stewart, B., Siemens, G., & Cormier, D. (2010). Massive open online courses. Digital ways of knowing and learning. The MOOC Model for Digital Practice. Charlottetown, Canada: University of Prince Edward Island.

McFarland, D., & Hamilton, D. (2005). Factors affecting student peformance and satisfaction: Online versus traditional course delivery. *Journal of Computer Information Systems, 46*(2), 25–32.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies.

Menzies, H. (1996). *Whose brave new world? The information highway and the new economy*. Toronto, Canada: Between the Lines.

Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood*. San Francisco, CA: Jossey-Bass.

Metzner, B. S. B. J. P. (1987). The estimation of a conceptual model of nontraditional undergraduate student attrition. *Research in Higher Education, 27*(1), 15–38.

Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.

Milheim, K. L. (2005). Identifying and addressing the needs of adult students in higher education. *Australian Journal of Adult Learning, 45*(1), 119–128.

Moore, M. G., & Kearsley, G. (2011). *Distance education: A systems view of online learning*. Belmont, CA: Cengage Learning.

Moskal, P., Dziuban, C., Upchurch, R., Hartman, J., & Truman, B. (2006, Fall). Assessing online learning: What one university learned about student success, persistence, and satisfaction. *Peer Review,* pp. 26–29.

Nakajima, M. A., Dembo, M. H., & Mossler, R. (2012). Student persistence in community colleges. *Community College Journal of Research and Practice, 36*, 591–613. doi:10.1080/10668920903054931

National Center for Education Statistics. (2013). *Nontraditional undergraduates/definitions and data*. Retrieved from nces.ed.gov/pubs/web/97578e.asp

O'Donnell, K. (2006). *Adult education participation in 2004–05*. Washington, DC: National Center for Education Statistics.

Parsad, B., & Lews, L. (2008). *Distance education at degree-granting postsecondary institutions: 2006–07*. Washington, DC: National Center for Education Statistics, Institute of Education Sciences.

Pascarella, E. T., & Terenzini, P. T. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *Journal of Higher Education, 51*(1), 60–75.

Picciano, A. G., Seaman, J., & Allen, I. E. (2010). Educational transformation through online learning: To be or not to be. *Journal of Asynchronous Learning Networks, 14*(4), 17–35.

Pittman, V. V. (2003). Correspondence study in the American university: A second historiographic perspective. In W.G. Anderson and M. G. Moore (Eds.), *Handbook of distance education* (pp. 21–35). New York, NY: Routledge

Pittman, V. (2008). An alien presence. *American Educational History Journal, 35*(1/2), 169–183.

Pontes, M. C., & Pontes, N. M. (2012a). Distance education enrollment is associated with greater academic progress among first generation low-income undergraduate students in the US in 2008. *Online Journal of Distance Learning Administration, 15*(1), Article n1.

Pontes, M. C. F., & Pontes, N. M. H. (2012b). Enrollment in distance education is associated with fewer enrollment gaps among nontraditional undergradutes in the U.S. *Journal of Asychronus Learning Networks, 16*(1), 79–89.

Portman, D. N. (1978). *The universities and the public*. Chicago, IL: Nelson-Hall.

Radford, A. W. (2011). *Learning at a distance* (NCES Report No. 2012-154). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Randy, G. (2009). Implications of online learning for the conceptual development and practice of distance education. *Journal of Distance Education, 23*(2), 93–103.

Rendon, L. I. (1994). Validating culturally diverse students: Toward a new model of learning and student development. *Innovative Higher Education, 19*(1), 33–51.

Rendon, L. I. (2002). Community College Puente: A validating model of education. *Educational Policy, 16*, 642–667.

Rodriguez, M. C., Ooms, A., Montanez, M., & Yan, Y. L. (2005). Perceptions of Online Learning Quality Given Comfort with Technology, Motivation to Learn Technology Skills, Satisfaction, and Online Learning Experience.*Online Submission*

Ross, T., Kena, G., Rathbun, A., KewalRamani, A., Zhang, J., Kristapovich, P., & Manning, E. (2012). *Higher education: Gaps in access and persistence study* (NCES Report No. 2012-046). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Ross-Gordon, J. M. (2011). Research on adult learners: Supporting the needs of a student population that is no longer nontraditional. *Peer Review, 13*(1), 26.

Rovai, A. P. (2003). In search of higher persistence rates in distance education online programs. *The Internet and Higher Education, 6*(1), 1–16.

Rovai, A. P., Wighting, M. J., & Liu, J. (2005). School climate: Sense of classroom and school communities in online and on-campus higher education courses. *Quarterly Review of Distance Education, 6*(4), 361.

Ruot, B. (2013). *An investigation of the six-year persistence/attainment of independent students and students beginning in community colleges, 2003–04–2008–09: A closer look at academic and social integration factors.* Buffalo, NY: State University of New York.

Schlosser, C. A., & Anderson, M. L. (1994). *Distance education: Review of the literature*. Retrieved from ERIC database. (ED 382159)

Scott, J. C. (1999). The Chautauqua movement: Revolution in popular higher education. *Journal of Higher Education, 70*(4), 389–412.

Sharp, W. L., & Cox, E. P. (2003). Distance learning: A comparison of classroom students with off-campus television students. The Journal of Technology Studies, 29 (2), 76-82.

Shea, P., & Bidjerano, T. (2014). Does online learning impede degree completion? A national study of community college students. *Computers & Education, 75*, 103–111.

Simonson, M. (2007). Course management systems. *Quarterly Review of Distance Education, 8*(1), 7–9.

Simonson, M., Schlosser, C., & Orellana, A. (2011). Distance education research: A review of the literature. *Journal of Computing in Higher Education, 23*(2–3), 124–142.

Skomsvold, P., Radford A. W., & Berker, L. (2011). *Six year attainment, persistence, transfer, retention and withdrawal rates of students who began postsecondary education in 2003–04* (NCES Report No. 2011-152). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Snyder, Thomas D. (2014). Mobile Digest of Education Statistics, 2013 (NCES 2014-085). National Center for Education Statistics, Institute of Educational Sciences, U.S. Department of Education. Washington, DC.

Soares, L. (2013). *Post-traditional learners and the transformation of postsecondary education: A manifesto for college leaders*. Retrieved from acenet.edu/news-room/Pages/Post-traditional-Learners-and-the-Transformation-of-Postsecondary-Ed.aspx

Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange, 1*(1), 64–85.

St. John, E. P., Cabrera, A.E., Nora, A., & Asker, E.H. (2000). Economic influences on persistence reconsidered: How can finance research inform the reconceptualization of persistence models? In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 29–47). Nashville, TN: Vanderbilt University Press.

Stokes, P. J. (2006). *Hidden in plain sight: Adult learners forge a new tradition in higher education*. Retrieved from ed.gov/about/bdscomm/list/hiedfuture/reports/stokes.pdf

Sumner, J. (2000). Serving the system: A critical history of distance education. *Open Learning, 15*, 267–285. doi:10.1080/026805100750036881

Taylor, J. C. (2001). *Fifth generation distance education*. Washington, DC: Higher Education Division, Department of Education, Training and Youth Affairs.

Thelin, J. R. (2004). *A history of American higher education*. Baltimore, MD: Johns Hopkins University Press.

Thompson, D. E., Orr, B., Thompson, C. (2001). How Nontraditional Bachelor of Science Degree Technology Students Perceive Distance Learning. *Journal of Technology Studies, 27*(1), 17-21.

Examining students'perceptions of their first-semester experience at a major land-grant institution. *College student journal*, *41*(3), 640.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*(1), 89–125.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Retrieved from ERIC database. (ED 283416)

Tinto, V. (1993). *Leaving college:Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press.

Tinto, V. (2002). *Enhancing student persistence: Connencting the dots*. Paper presented at Optiminzing the Nation's Investment: Peristence and Success in Postsecondary Education, University of Wisconsin, Madison.

Tseng, J. C. R., Chu, H.-C., Hwang, G.-J., & Tsai, C.-C. (2008). Development of an adaptive learning system with two sources of personalization information. *Computers & Education, 51*, 776–786. doi:10.1016/j.compedu.2007.08.002

U.S. Department of Education, NCES. (2002b). Digest of Education Statistics 2001 (NCES 2002-130). Washington, DC: U.S. Government Printing Office.

Verduin, J. R., & Clark, T. A. (1991). *Distance education: The foundations of effective practice*. San Francisco, CA: Jossey-Bass.

Watkinson, J. D. (1996). "Education for success": The International Correspondence Schools of Scranton, Pennsylvania. *Pennsylvania Magazine of History and Biography*, pp. 343–369.

Wendler, C., Bridgeman, B., Markle, R., Cline, F., Bell, N., & McAllister, P. (2012). *Pathways through graduate school into careers*. Princeton, NJ: Educational Testing Service.

Xu, D., & Jaggars, S. S. (2011). *Online and hybrid course enrollment and performance in Washington State community and technical colleges* (CCRC Working Paper No. 31). Retrieved from ccrc.tc.columbia.edu/media/k2/attachments/online-hybrid-performance-washington.pdf

Yin, R. K. (2014). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.

Young, J. R. (2002). Hybrid teaching seeks to end the divide between traditional and online instruction. *Chronicle of Higher Education, 48*(28), A33.

APPENDIX A: QUALITATIVE INQUIRY—INTERVIEW QUESTIONS

The study will seek to provide insight into the practices, policies, and experiences of the institutions with respect to nontraditional course delivery and nontraditional students by answering additional questions:

I. How does your institution define the following course delivery methods?
    A. Face-to-face
    B. Online
    C. Hybrid
    D. How has this changed over the last 10 years?

II. What proportion of courses are available to nontraditional students in online and/or hybrid format?
    A. How has availability changed in the past 10 years?

III. How are nontraditional course delivery methods presented or described in materials for nontraditional students in institutional materials?
    A. Institutional data
        1. In what documents is course delivery method addressed?
        2. Are there stated policies governing course delivery method?
        3. What is the institutional strategy regarding online and hybrid course delivery?
        4. What procedures or protocols are in place to address and govern course delivery methods?
    B. Marketing materials

1. Is course delivery method part of the institution's marketing strategy for reaching nontraditional students?
    a. How is it communicated?
        i. Message
            1) What are the copy points?
            2) What visuals are utilized?
        ii. Media
            1) What forms of media are utilized to reach nontraditional students?
    b. Target audience
        i. Is the nontraditional student a distinct audience for your institution?
        ii. If so, how is outreach to this population different when compared to traditional students?
        iii. What strategies and tactics are employed to reach nontraditional students?

IV. Discuss the history of nontraditional course delivery—online and hybrid—at your institution?

V. What is the role of nontraditional course delivery—online and hybrid—at your institution?
    A. Student experience
    B. Faculty experience
    C. Other

VI. How has the development of online and hybrid course delivery impacted institutional culture at your university?

APPENDIX B: DATA SHELL TABLE—INFORMANT INTERVIEW

Participant name	Theme code	Researcher question/participant response
Researcher		**I. How does your institution define the following course delivery methods:** **I.A. Face-to-face?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**I.B. Online?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**I.C. Hybrid?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**I.D. How have these definitions changed over the last 10 years?**
Rush University, Informant 1		
Rush University, Informant 2		

Participant name	Theme code	Researcher question/participant response
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**II. What proportion of courses are available to nontraditional students in online and/or hybrid format?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**II.A. How has availability of online and/or hybrid format changed in the past 10 years?**
Rush University, Informant 1		
RushUniversity, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III. How are nontraditional course delivery methods presented or described in materials for nontraditional students in institutional materials and marketing materials?**
Rush University, Informant 1		
Rush,University, Informant 2		
Southeast University, Informant 1		

Participant name	Theme code	Researcher question/participant response
Southeast University, Informant 2		
Researcher		**III.A.1. Institutional data: Documents addressing course delivery methods**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III.A.2. Institutional data: Stated policies governing course delivery method**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III.A.3. Institutional data: Institutional strategy regarding online and hybrid course strategy**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III.A.4. Institutional data: Procedures or protocols in place to address and govern course delivery methods**

Participant name	Theme code	Researcher question/participant response
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III.B.1. Marketing materials: Is course delivery method part of the institution's marketing strategy for reaching nontraditional students?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III.B.1.a. Marketing materials: How is course delivery method communicated in marketing materials reaching nontraditional students?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III.B.1.a.i. Marketing materials: Communication message?**
Rush University, Informant 1		
Rush University, Informant 2		

Participant name	Theme code	Researcher question/participant response
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III.B.1.a.i.(1). Marketing materials: Communication message—copy points?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		**III.B.1.a.i.(2). Marketing materials: Communication message—visuals utilized?**
Rush University, Informant 1		**III.B.1.a.ii.(1). Marketing strategy: Forms of media utilized to reach nontraditional students?**
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III.B.1.b.i. Marketing strategy: Target audience—is the nontraditional student a distinct audience for your institution?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		

Participant name	Theme code	Researcher question/participant response
Southeast University, Informant 2		
Researcher		**III.B.1.b.ii. Marketing strategy: Target audience—if so, how is outreach to this population different when compared to traditional students?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**III.B.1.b.iii. Marketing strategy: Target audience—what strategies and tactics are employed to reach nontraditional students?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**IV. Discuss the history of nontraditional course delivery—online and hybrid—at your institution?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		

Participant name	Theme code	Researcher question/participant response
Researcher		**V. What is the role of nontraditional course delivery—online and hybrid—at your institution?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**V.A. Role of nontraditional delivery in the student experience?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**V.B. Role of nontraditional delivery in the faculty experience?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		**V.C. Other roles of nontraditional delivery on your institution?**
Researcher		
Rush University, Informant 1		
Rush University, Informant 2		

Participant name	Theme code	Researcher question/participant response
Southeast University, Informant 1		
Southeast University, Informant 2		
Researcher		**VI. How has the development of online and hybrid course delivery impacted institutional culture at your university?**
Rush University, Informant 1		
Rush University, Informant 2		
Southeast University, Informant 1		
Southeast University, Informant 2		

APPENDIX C: INSTITUTIONAL AGREEMENT

College of Education

Department of Educational Leadership

9201 University City Boulevard, Charlotte, NC 28223-0001

Dear _____,

This requests your agreement to provide institutional data sets and allow their use in the study I am proposing for my dissertation: The role of non-traditional course delivery in persistence among nontraditional undergraduate students.

Background and study purpose

Today courses in higher education are delivered face-to-face, completely online via technology, or in a hybrid format that combines both face-to-face and online modalities of instruction. Further, the population of nontraditional undergraduates is growing. This study seeks to understand the impact of different course delivery methods on the persistence of undergraduates who are in nontraditional, e.g. 24 years of age or older and financially independent.

Research design and questions

Using multiple case study design, the research will include nontraditional undergraduate students at two large, four-year institutions in the eastern United States. The research questions include:

1. What is the context of non-traditional course delivery for non-traditional undergraduate students at each institution? That is, how are nontraditional course delivery methods presented or described in materials for nontraditional students in institutional materials, e.g., policies and documents? How do these institutions define nontraditional course delivery methods? What proportion of courses is

available to nontraditional students in a non-traditional format, and how has availability changed in the past 10 years?

2. Taking into account background, life circumstances, and enrollment behavior, to what extent is course delivery method (majority online, majority hybrid, or majority traditional) predictive of persistence among nontraditional students at each institution?
3. What similarities and differences in context and student results can be seen across the two institutions?

The data fields requested represent variables for the study aligned to research question 2 above. Students will belong to one of three outcome groups, i.e. continuing, not continuing, or completed/graduated, representing the dependent variable in the study, which may be the result of or influenced by the independent variables.

Requested data and timing

The specific student data variables I am seeking are in the attached table, including definitions and coding scheme. All data will be de-identified by the institution and no personally identifiable information will be included in the reporting of statistical analysis and result. All study data will be maintained and stored on the researcher's personal computer which is password protected. After a period five years the data will be destroyed. Summary data will be shared with the researcher's doctoral committee and other appropriate representatives of the university. This may be disseminated to the professional community through presentations or publications however, in no way will responses be traceable to individual participants in the study.

With your agreement, data sets will be requested from your office after I have approval from the UNC Charlotte Institutional Review Board. For your planning purposes I anticipate that in the latter half of July 2015.

Institutional Representative Agreement

I have read the information in this agreement. I have had the chance to ask questions about this study, and those questions have been answered to my satisfaction. I am an authorized representative of my institution and able to provide the requested data for the purposes described in this agreement. I understand that I will receive a copy of this form after it has been signed by me and the Principal Investigator.

Institutional Representative Name (PRINT)	
Institutional Representative Signature	DATE
Institution and Participant Title	
Investigator Signature	DATE

APPENDIX D: TABLE OF DATA ELEMENTS

Variable category	Variable name	Definition	Coding
Dependent	Persistence	Degree attainment or completion, as well as active student status, i.e., registered for at least one course in the 12 months prior to and including Spring 2015	0 = no degree, inactive (not registered for any course in the 12 months prior to and including Spring 2015) 1 = no degree and active (registered for at least one course in the 12 months prior to and including Spring 2015) or completed, attained degree
Control variables, e.g., background and demographics	Gender	Male or female	0 = male 1 = female
	Race/ethnicity	Caucasian/White, African American/Black, Hispanic, Asian, all other/unknown	0 = White 1 = African American/Black 2 = all other/unknown
	Age	Student's age at the time of matriculation (Fall 2009 or Spring 2010)	1 = up to and including 29 years old 2 = 30 years old and older
Current and fluid life circumstances	Financially independent	Pell Grant recipient	0 = not a Pell Grant recipient 1 = Pell Grant recipient
College enrollment behaviors	Matriculation status	Previous enrollment in a higher education institution as of Fall 2009 or Spring 2010	0 = first-time beginning undergraduate 1 = transfer student
	Enrollment status	Intensity of course taking	0 = full time, all the time 1 = part time, any time
	Stop out actions	One or more terms without being registered for at least one course	0 = continuous enrollment throughout the study period until graduation or Spring 2014 1 = not registered for a course during one or more one terms

	Remedial course taking	Registered for one or more courses defined as remedial by the institution and not counting toward degree completion	0 = no remedial course work 1 = one or more remedial courses
	Grade point average	The weighted average of final grades earned	First-year GPA
Variable of Interest	Majority course delivery method	60% or greater course credits	0 = traditional or face-to-face 1 = online or hybrid 2 = nonmajority/mixed

APPENDIX E: RECRUITMENT E-MAIL

Introductory email script – Institutional Informants

Dear _____,

I am a doctoral student at UNC Charlotte in the College of Education's Educational Leadership department; the chair of my dissertation committee is Dr. Alan Mabe. I am conducting a dissertation research study, "The role of non-traditional course delivery in persistence among nontraditional undergraduate students", to understand the impact of different course delivery methods on the persistence of undergraduates who are nontraditional and invite your participation as an institutional informant for _____ university.

Nontraditional or adult undergraduate students are a large and growing portion of the student population on most college campuses today; however, persistence to degree remains challenge for this group. At the same time modalities of instruction increasingly incorporate computer and internet technologies to provide higher education via hybrid and online courses. The proposed case study seeks to analyze conditions, e.g. institutional strategies and intended outcomes of course delivery, in order to understand the larger context in which the relationship of interest exists, that is between course delivery method and nontraditional student persistence.

I have attached several documents for your review:

- Research study overview and questions
- Your institution's IRB approval
- Institutional Informant Informed Consent

With your agreement, I would like to schedule time with you to talk by phone regarding the research study and your prospective participation. Would (date) at (time) be convenient for you?

I appreciate your consideration of my request and look forward to speaking with you.

Best regards,

Carlie

Carlie Houchins
Doctoral Candidate, Educational Leadership
College of Education
UNC Charlotte

APPENDIX F: INSTITUTIONAL INFORMANT INFORMED CONSENT

College of Education

Department of Educational Leadership

9201 University City Boulevard, Charlotte, NC 28223–0001

Informed Consent for

The role of non-traditional course delivery in persistence among nontraditional undergraduate students

Project Title and Purpose:

You are invited to participate in a research study entitled "**The role of non-traditional course delivery in persistence among nontraditional undergraduate students**." Today courses in higher education are delivered face-to-face, completely online via technology, or in a hybrid format that combines both face-to-face and online modalities of instruction. This study seeks to understand the impact of different course delivery methods on the persistence of undergraduates who are in nontraditional, e.g. 24 years of age or older and financially independent.

Investigator(s):

This study is being conducted by Carlie Houchins, a doctoral student in the Department of Educational Leadership in the College of Education at UNC Charlotte, under the guidance of Dr. Alan Mabe (responsible faculty).

Description of Participation:

You will be asked to participate in a phone interview estimated to last approximately 30–45 minutes. The interview questions will be provided ahead of time for your review. The researcher intends to tape-record the interviews for accuracy and ease of transcription. You will be able to review and correct, if needed, the transcript.

Length of Participation:

Your participation in this project is estimated to take 60–120 minutes. In addition to the aforementioned phone interviews, you may be asked to identify, collect, and provide institutional documents and materials related to nontraditional course delivery and nontraditional students. There may be additional, brief phone or e-mail follow-up for information and to clarify the researcher's understanding. Finally, you may choose to review the transcript to ensure accurate representation. If you decide to participate, you will be one of approximately two representatives or informants for your institution in this study.

Risks and Benefits of Participation:

There are no known risks to participation in this study. However, there may be risks which are currently unforeseeable. There are no benefits of participation in this study to the individual participants; however, societal benefits of the study may include improved institutional strategies for nontraditional course delivery leading to increased rates of persistence among nontraditional students. No reimbursements are being offered for participation in the study.

Conflict of Interest:

There are no known conflicts of interest on the part of the researcher or responsible faculty, e.g. financial interests. The research is being conducted solely for scholarly purposes in order to satisfy university degree requirements.

Volunteer Statement:

You are a volunteer. The decision to participate in this study is completely up to you. If you decide to be in the study, you may stop at any time. You will not be treated any differently if you decide not to participate or if you stop once you have started.

Confidentiality:

Any information about your participation, including your identity, will be kept confidential to the extent possible. The following steps will be taken to ensure this confidentiality:

1. Institutions are re-named in the study to protect identities
2. Pseudonyms will be assigned to all individuals acting as informants for the research
3. Study data, including interview tapes and transcripts, will be maintained and stored on the researcher's personal computer which is password protected and kept in the researcher's office.
4. Documents and other materials not easily stored on a computer will be kept in locked files and drawers at the researcher's office.
5. After a period of five years the data will be destroyed.

Summary data will be shared with the researcher's doctoral committee and other appropriate representatives of the university. This may be disseminated to the professional community through presentations or publications, however, in no way will responses be traceable to individual participants in the study.

Fair Treatment and Respect:

UNC Charlotte wants to make sure that you are treated in a fair and respectful manner. Contact the University's Research Compliance Office (704.687.1871) if you have any questions about how you are treated as a study participant. If you have any questions about the project, please contact Carlie Houchins at 704.904.3536, Principal Investigator, or Dr. Alan Mabe, xxx.xxx.xxxx, Responsible Faculty, Department of Educational Leadership, College of Education.

This form was approved for use on July 28, 2015 for a period of one (1) year.

Participant Consent

I have read the information in this consent form. I have had the chance to ask questions about this study, and those questions have been answered to my satisfaction. I am at least 18 years of age, and I agree to participate in this research project. I understand that I will receive a copy of this form after it has been signed by me and the Principal Investigator.

Participant Name (PRINT)	
Participant Signature	DATE
Investigator Signature	DATE