The Relationship between First-Year Student Retention and Type of Faculty at a Four-Year Public Research University: A Profile of Three Academic Colleges

A dissertation presented to

the faculty of

The Patton College of Education of Ohio University

In partial fulfillment

of the requirements for the degree

Doctor of Philosophy

Elizabeth A. Bennett

April 2017

This dissertation titled

The Relationship between First-Year Student Retention and Type of Faculty at a Four-Year Public Research University: A Profile of Three Academic Colleges

by

ELIZABETH A. BENNETT

has been approved for

the Department of Counseling and Higher Education

and The Patton College of Education by

Laura Harrison

Associate Professor of Counseling and Higher Education

Renée A. Middleton

Dean, The Patton College of Education

Abstract

BENNETT, ELIZABETH, A., Ph.D., April 2017, Higher Education

The Relationship between First-Year Student Retention and Type of Faculty at a Four-Year Public Research University: A Profile of Three Academic Colleges

Director of Dissertation: Laura Harrison

Institutions of higher education face increased pressure from various constituents regarding accountability, transparency, and student success. College and university leaders continuously strive to find new ways to improve the performance of their students and to ensure their students achieve academic success. Increasing the percentage of first-year students that are retained to the second year is one way higher education institutions can demonstrate they are meeting these goals. There are many factors that could impact student retention rates such as race, gender, socioeconomic status, and academic preparedness. Another area that is facing growing concern is the relationship that faculty type may have on student retention. This study used quantitative statistical analyses to profile first-year students enrolled within three academic colleges at a large four-year public, research university. Descriptive statistics, percentages, point-biserial correlation and logistic regression were used to examine the relationship between faculty type and first-to-second year student retention rates. Results of the research found that many complex relationships exist between student characteristics, type of faculty, and first-year student retention. Significant relationships were found between student retention rates and type of faculty teaching first-year students, however, faculty type is not a strong predictor of student retention.

Acknowledgements

I would like to acknowledge the members of my committee, Dr. Michael Williford, Dr. Peter Mather, Dr. David Descutner, and my chair, Dr. Laura Harrison. I truly appreciate all of the time that you have spent guiding me through this process and for the invaluable feedback and support you have given me over the last couple of years.

I would like to especially thank Dr. Harrison for being such a patient and thoughtful advisor throughout my entire doctoral career and for all of the support and advice you have given me. You have been with me from my very first doctoral course teaching me how to write graduate level research papers that I have used in every course since and throughout my dissertation as well. I could not have asked for a better role model to guide me through this experience.

A special thank you to Dr. Williford as well, who was responsible for encouraging me to pursue my PhD (and my Master's degree) in the first place and for helping me along the way. You have been a true friend and mentor and I am very thankful for all of the guidance and support you have given me over the last five years.

I would like to thank my family for all of the support they have given me over the years. I hope that my two sons, Tyler and Justin, will find the love of learning that I have and that they realize it is never too late to pursue one of your dreams. Thank you to all of my friends for their support as well. I would like to especially thank Carole Cordray-Syracuse for being a champion of mine from the very beginning. I truly appreciate all of your words of encouragement, the phone calls and voicemails urging me on, and all of the dinners and lunches we had to celebrate the mini-milestones along the way.

Table of Contents

Page

List of Tables

Page

Chapter One: Introduction

Introduction

Every year, thousands of high school graduates fail to successfully navigate the difficult transition to a postsecondary institution and leave during their first year of college. Young people who do not graduate college are left without the necessary credentials to obtain employment and have caused the United States to fall behind other nations in the percentage of citizens with degrees (Ebersole, 2010). Degree attainment rates have been on the rise in almost every industrialized country except for the United States where completion rates remained relatively flat from 2000 to 2010 (Auguste, Cota, Jayaram, & Laboissiere, 2010). Colleges and universities have been focused on inputs, attracting as many students as possible, instead of outputs, ensuring that students successfully complete their education. Increasing student retention rates and determining the underlying factors that lead to attrition has become one of the top priorities for many stakeholders at the institutional, state, and federal levels (Hurley, Harnisch, & Parker, 2014; Marsh, 2014). Institutional leaders must shift their focus from just getting students in the door to devoting resources to making sure that students have the tools they need to succeed in college (Blankenship, 2010).

Classroom experiences and faculty interactions are significant factors that can greatly impact students' college experience, affecting their decision to remain in school or not (Grosset, 1991). The make-up of faculty employed in institutions of higher education has changed significantly from 1995 to 2015, with greater numbers of part-time and non-tenure track faculty teaching courses (Eagan, Jaeger, & Grantham, 2015),

and various stakeholders are interested in knowing what impact this may have on students. This study examined the relationship between first-year student retention rates and the types of faculty with whom they take their courses.

First-Year Student Retention

College and university leaders are coming under increased pressure by government leaders and other external constituents to demonstrate institutional effectiveness, especially in regards to student completion and degree attainment (Devarics, 2009; Tandberg & Hillman, 2014). At the national level, there has been a call to increase the number of citizens who hold an earned degree or certification from a postsecondary institution. Producing more college-educated workers will be a critical step to ensure the overall economic growth and prosperity of the United States and to secure its position in a global economy (Auguste et al., 2010). In his first State of the Union address, President Obama (2009) set an ambitious goal for the US to have the highest proportion of college graduates in the world by the year 2020 and emphasized that "a good education is no longer just a pathway to opportunity, it is a prerequisite" (para. 61). Support for this proposal called for investing in college access and retention initiatives with an average of $500 million in annual government spending over a five-year period towards policies and programs that would address access and retention efforts in order to help the United States meet its goal (Devarics, 2009).

Other national organizations and foundations have responded to this call as well. Complete College America (CCA) is a non-profit organization established in 2009 in order to increase the level of educational attainment in the United States by proposing

strategies that place value on outcomes such as credentials awarded or successfully completed courses (Walters, 2012). CCA is an independent initiative that involves the participation of 29 states who have agreed to adhere to a comprehensive set of reforms such as streamlining curricular offerings and implementing performance funding strategies tied to completion rates (Humphreys, 2012). Several large foundations such as the Lumina Foundation for Educators and the Bill and Melinda Gates Foundation are also funding dozens of initiatives that are designed to increase productivity and completion rates. Increased student success can be accomplished through programs and projects designed to improve data collection, streamline requirements, increase effectiveness of remedial or developmental educational programs, and expand the use of various student success strategies (Humphreys, 2012). The Bill and Melinda Gates Foundation has invested resources in initiatives such as the College Ready Education program which strives to prepare all high school graduates to succeed in college, as well as in the Postsecondary Success initiative where the goal is to increase the number of young people in the United States who earn a certificate or degree (Bill & Melinda Gates Foundation, 2014).

Many state governments have sought to meet student success and educational attainment goals by initiating completion agendas to increase the number of individuals in the state earning some type of degree or certification each year. Some states incentivize this by tying portions of annual subsidy allocations to success measures such as the number of degrees awarded, credit hours completed, or other forms of outcome measures. Several state governors and legislatures have turned to performance-based

funding models in order to encourage higher education institutions to make concerted efforts to improve the number of students who successfully complete a degree or certificate. States such as Tennessee, Ohio, and Texas have led the way with their performance-based funding initiatives (Walters, 2012). In 2009, the state of Ohio switched their subsidy allocation formula to more heavily weight student success measures such as course completions and degrees awarded. Tennessee passed the Complete College Act in 2010 that significantly changed the way in which its higher education system is funded. Institutions in Tennessee receive their funding from the state based on the number of graduates produced and how well their students progress towards their degrees (Kelderman, 2012; Walters, 2012). Metrics included in the formula that are directly tied to the first-year experience include freshman to sophomore retention rates and the completion of remedial courses (CCA, 2014; Jones, 2011).

According to data published by the National Center for Education Statistics (2013), 21 percent of first-time, full-time students who enrolled at a four-year degree-granting institution did not return for their second year. Student retention rates have become important indicators of college enrollment effectiveness and accountability measures in higher education (Tinto, 2006; Wild & Ebbers, 2002). At the institutional level, efforts have been made to address student retention by placing greater emphasis on improving the first-year experience through the implementation of living/learning communities, the creation of advising centers, and the formulation of targeted first-year courses and programming (Goodman & Pascarella, 2006; Johnson, 2000; Porter & Swing, 2006; Purdie & Rosser, 2011). A greater understanding of factors related to the

academic side of the first-year student's experience would aid college leaders in strategic planning initiatives to further assist students as they integrate academically to college and ideally are retained to their second year.

Increase in Part-Time Faculty

Since the year 2000, a large change in the composition of faculty members employed by institutions of higher education has been evident. One aspect of the faculty composition that has changed significantly is the large increase in the number of part-time or contingent faculty employed at colleges and universities. Part-time faculty are typically employed on a term-by-term basis, paid per credit hour or course, and receive less than full benefits (Gappa & Leslie, 1993; Schuster & Finkelstein, 2006). Data collected from institutions in the United States through the Integrated Postsecondary Education Data System (IPEDS) and reported by NCES (2013) show that the number of part-time instructional faculty positions increased 54% in the ten-year period from 2001 to 2011. In that same period, the number of full-time instructional faculty increased by only 23% (NCES, 2013). Part-time faculty members tend to have higher turnover rates than full-time faculty (Gappa & Leslie, 1993; Schuster & Finkelstein, 2006) and have been shown to underperform in the instruction of undergraduate education (Umbach, 2007). Additional concerns regarding the use of part-time faculty in colleges and universities include inaccessibility to students (Kezar, 2013), lack of scholarly knowledge (Schuster, 2003), and inability to prepare students for subsequent courses (Burgess & Samuels, 1999). These performance issues related to part-time faculty can have a detrimental effect on instructional consistency, student support, and learning outcomes.

Understanding how the composition of different types of faculty within an academic college or department can affect student outcomes is key for institutional leaders to ensure that they are making informed hiring decisions and managing their resources in the best possible way to assist the students they serve.

Connection between Student Retention and Interactions with Faculty

Student relationships with faculty members can be a key factor in determining whether or not they are retained after their first year in college (Jaeger & Hinz, 2008). Some of the earlier retention studies examined this link between students and faculty (Tinto, 1993) and found that academic success or failure may influence retention and can be a reflection of classroom effects such as faculty teaching patterns, teacher expectations, and academic rigor. At many colleges and universities, part-time faculty members are being used to teach a significant proportion of the remedial and introductory courses (Benjamin, 2002; Harrington & Schibik, 2004) and general education courses (Reichard, 2003) that first-year students take. Institutional leaders need to ensure that students receive the best instruction possible during that crucial first-year they are enrolled in order to lay the foundation for academic success.

Prior research has shown a negative correlation between the extent to which students are exposed to part-time faculty and the subsequent retention of those students (Harrington & Schibik, 2004; Jaeger and Hinz, 2008; Ronco and Cahill, 2006). Studies examined the amount of exposure to part-time faculty during the first year and determined that students who took a higher percentage of their courses from part-time faculty in their first semester were less likely to persist to their second year (Bettinger &

Long, 2006; Harrington & Schibik, 2004; Jaeger & Hinz, 2008). With an increased emphasis on retaining students past their first year of college, further research examining the relationship between student retention and faculty type is needed. This study seeks to expand on the existing body of research by examining the relationship between the type of faculty teaching first-year student courses at a four-year doctoral-research institution and student retention rates. The current study expands on prior research by focusing on students from different academic disciplines that share similar student and faculty characteristics in order to provide a more detailed look at the factors related to faculty that may be related to student retention.

Theoretical Framework

The current study examines the impact of faculty type on first-year student retention rates at a four-year public university. The study of student retention and attrition rates in higher education is a complex process that has been examined by researchers since the 1950s (e.g., Iffert, 1958). As student populations have grown larger and more diverse, so too have the underlying issues that can impact students' enrollment patterns. The earliest studies that began to treat student attrition as a problem began in the 1930s but did not evolve to the more contemporary, focused topic of study until the 1970s. This was spearheaded by Vincent Tinto (1975) who built upon pre-existing models to produce his interactionalist theory of student departure which became one of the best known, and most often cited, theories dealing with student retention (Berger & Lyon, 2005). The most recent theory posited by Tinto (1993) suggests that students who have rewarding academic and social encounters both formally and informally will be

better integrated into their environment and therefore have higher rates of persistence. This study is also informed by Bean's (1990) model of student attrition, which puts forth the idea that students attending colleges and universities leave their institutions because they are dissatisfied with their environment.

With college students spending a great deal of their time within an academic classroom environment, the experiences those students have with the faculty members who teach their classes become even more important to success during that first year. Eagan and Jaeger (2008) created a conceptual framework that assumes that first-year students who are exposed to higher levels of part-time faculty instruction will have fewer meaningful interactions than students who had more instruction from full-time faculty and will therefore become less integrated into the academic culture of an institution. Studies regarding student retention have focused on several themes: (a) student background characteristics (gender, race/ethnicity, age, residency, and socioeconomic status); (b) academic preparedness for college (high school GPA, standardized test scores, and high school class rank); and (c) college experiences (class size, credit hours taken, interactions with faculty, and academic integration). As retention research developed and branched out to focus on other factors, the findings of earlier studies became widely accepted and cited, which explains their inclusion in the current study. Using these theoretical frameworks allowed the research in this study to be framed in such a way as to assess the relationship between faculty type and the retention of first-year students.

Statement of the Problem

A significant number of degree-seeking first-year students leave their institutions before the start of their second year, leaving academic leaders wanting to ascertain the factors that may have caused these levels of attrition. While there may be many contributing reasons for students leaving college, issues regarding academic performance and integration are among the most prevalent. Ensuring the academic success of their students is one key area that college and university leaders can focus on in order to improve the experience that students have in their first year. With the knowledge that students are most likely to leave an institution between their first and second year of study, it is crucial for academic programs to maintain a high level of instructional quality. It is during this critical period in their academic careers that first-year students have the most exposure to part-time faculty with many introductory or remedial courses being taught by these types of faculty (Benjamin, 2002; Harrington & Schibik, 2004). Research has shown that part-time faculty demonstrate lower levels of instructional quality at the undergraduate level and use less interactive and engaging teaching methods (Umbach, 2007).

While the organizational structure of each college or university is different, many institutions organize their students and faculty according to similar fields of study or disciplines. Within the academic community of a college or university, academic disciplines are the educational home of both students and faculty (Smart, Feldman, & Ethington, 2000). Groups of academic disciplines are housed within a college or school and are often overseen by an academic leader such as a dean. Many academic and

financial decisions affecting the college are made by a dean or a department head, including the oversight of the composition of the faculty teaching their courses (Boden & Borrego, 2011). Insight into the influence that the various disciplinary settings have on student and faculty interactions is key to understanding issues related to student persistence, satisfaction, and success (Smart et al., 2000). This study attempts to address issues of faculty and student interactions in the classroom by examining the relationship between the types of faculty who are teaching first-year student courses and the retention rates of students enrolled within a select grouping of academic colleges.

Research Questions

The research questions to be addressed by this study are:

Research Question 1: Is there a relationship between first-year retention at a four-year public, research university and the type of faculty with whom students take their courses, controlling for student characteristics, student academic preparedness, and faculty characteristics?

Research Question 2: Are there differences among first to second year retention rates based on the proportionality of their coursework that students take from the different types of faculty?

Research Question 3: Are there differences among academic colleges in regards to the composition of their faculty and the subsequent retention rates of their first-year students?

Significance of the Study

The main goal for students matriculating as degree-seeking students at institutions of higher education is to successfully navigate their way through their academic coursework in order to complete their programs of study and earn their degree. This goal is facilitated by students' positive experiences in their academic courses and with the faculty members who are there to guide them through the process. Thus, it becomes important to have quality instructors available to students from the moment they matriculate. This study is useful to academic college and departmental leaders who are charged with making strategic decisions for their units, such as shaping the composition of the faculty and deciding which types of faculty to assign to teach particular courses. The need for decision makers to balance economic concerns with regards to hiring decisions as well as the need to ensure student satisfaction in order to retain students makes it necessary to have relevant information on which to base their decisions. This study provides institutional and departmental leaders with valuable information regarding the impact that collegiate faculty profiles and instructional practices have on retaining the students necessary to attain the desired level of student outcomes and to receive the desired levels of tuition and subsidy income that is essential for ensuring the success of their units.

Definition of Terms

The following terms are referenced throughout this study and are important for the reader to have a clear understanding of how these words are defined in regards to the current research.

First-year student – A student who is matriculating at a postsecondary institution at the undergraduate level for the first-time during the fall semester of an academic year. To be included in retention analysis, the student must have been enrolled full-time (twelve or more credit hours) by the fifteenth day of the fall term in a degree-seeking academic program.

Tenured/tenure-track faculty – Faculty members who have either earned tenure or are on track to earn tenure within a given academic discipline. Most faculty members in this group are full-time and have some combination of instruction, research, and service duties to the institution. Tenured/tenure-track faculty members hold faculty status, serve on faculty governing boards, and hold faculty rank such as Professor, Associate Professor, or Assistant Professor.

Non-tenure track instructional faculty – Faculty members who hold either full-time or part-time annual appointments whose main job duties are teaching courses with little or no expectations for research or service activity. Faculty members in this group may have representation on faculty governing boards and hold academic titles similar to tenured/tenure-track faculty as well as others such as Instructors and Lecturers.

Part-time term faculty – Faculty members who hold only part-time appointments and who are only employed on a term by term basis and whose sole purpose is to teach academic courses. Faculty members in this group hold no expectation of continued employment, are paid by the number of credit hours they teach, and are unable to serve on faculty governing boards.

Visiting faculty – Faculty members who are employed by the university on a full-time or part-time basis who typically come from another postsecondary institution or who hold other industry positions. Faculty members in this group are employed on an annual basis, up to a maximum of three years, and are unable to serve on faculty governing boards.

Early retired faculty – Faculty members who previously held a tenured/tenure-track appointment and who have accepted an early retirement agreement with the institution to teach courses on a part-time basis until a specific age has been reached.

Graduate assistants – Students enrolled at the institution at the graduate level and who may teach courses as part of a graduate appointment or in exchange for receiving a stipend.

Other instructors – Instructors who do not hold a faculty position who may be employed in another capacity at the university such as an administrative or staff position, or instructors not paid by the university itself but who teach courses within the institution.

Retention rate – The percentage of incoming first-time, full-time, degree seeking undergraduates who enter an institution in the fall of one academic year and who subsequently return for the fall term of the next academic year. Students must be enrolled by the fifteenth day of the fall term of their second year in order to be considered retained at the institution.

Study Limitations

The research for this study was conducted using data obtained from a single four-year public research university located in the Midwest and therefore may limit the ability

to generalize these results to other four-year institutions as well as other types of institutions such as private universities, community colleges, and other two- and four-year schools. Institutional data was obtained from two different data management systems and, although generally reliable, relies on the accuracy of the data that was obtained from both students at the time of admission to the institution and faculty that were hired by the institution. The student characteristic, academic preparedness, college experience, and faculty demographic variables chosen for this study were selected due to prior evidence of relevance, but other variables that were not controlled for in the study could also be significant factors in regards to student retention. The number of variables used in the study was contained to those considered to be the most relevant based on prior studies.

Delimitations

The study was delimited to students who were enrolled as first-time, full-time students in a degree-granting program of study at a four-year public research university in the Midwest. The population consisted of all first-year undergraduate students who entered the institution during the fall semester of 2014 and enrolled in an academic program housed within the collective group of academic colleges that include fields of study in the social sciences, natural sciences, education, and health sciences. The academic college enrolling students whose majors are referred to in this study as social and natural sciences also include a range of academic majors that are considered humanities majors such as languages, English, philosophy, and history in addition to majors categorized as social sciences such as economics, political science, psychology,

sociology, and geography. Natural sciences majors refers to fields of study in the physical or formal sciences such as geology, biology, chemistry, physics, and mathematics. The study was limited to this grouping of colleges because the composition of the faculty employed within those colleges is sufficiently variable across the different types of faculty as well as the fact that their students are similar in terms of academic qualifications which could influence the results of their retention rates. Enrollment data on all undergraduates for the fall semester of 2015 was also incorporated to verify whether or not the students from the prior year were still enrolled as of the fifteenth day during their second year. The study also consisted of all faculty members and graduate assistants who were paid employees of the university and were listed as the instructor of record for the courses taken by first-year undergraduate students during the 2014-15 academic year.

Chapter Two: Literature Review

Introduction

First-year student retention has been the subject of numerous studies in the field of higher education from the 1970s through the 2000s. This chapter provides a review of relevant research regarding first-year student retention and the various factors that may be related to whether or not those students persist to their second year of college. One of the factors that can influence a student's decision to remain enrolled at a particular institution is the academic instruction a student receives and the faculty interactions that a student experiences during her or his first year of school. The chapter continues with an overview of the growth in part-time faculty appointments and describes the types of individuals who are employed as part-time faculty members, the reasons why part-time faculty are used by institutions of higher education, and the concerns that have been expressed regarding the quality of part-time faculty members. One of the concerns expressed regarding part-time faculty members is the impact that these types of instructors may have on students and the academic experiences they have in and out of the classroom. The chapter finishes by reviewing the research surrounding the impact that faculty type may have on student academic indicators as well as student outcome measures such as retention and graduation rates.

Factors Influencing First-Year Student Retention

As student success has gained importance among institutions of higher education, a wide variety of retention-related studies have been conducted on factors related to student characteristics, experiences, and environments. Institutional stakeholders have a

vested interest in ensuring that their students remain enrolled in college in order to demonstrate academic quality, manage financial resources, and respond to state and federal directives.

Researchers have examined the relationship between first-year retention rates and student characteristics such as gender (Astin, 1975; Leppel, 2002; Mortenson, 2001; Tinto, 1993), race/ethnicity (Arbona & Nora, 2007; Hu & St. John, 2001), age (Bai & Pan, 2009; Grosset, 1991; Samuels, Beach, & Palmer, 2011), residency status (Herzog, 2005), and socioeconomic status (Field & Morgan-Klein, 2013; Ishitani, 2006; O'Keefe, 2013). Retention studies have had variable outcomes in regards to gender with some studies showing increased retention rates for females (Leppel, 2002; Mortenson, 2001; Wohlgemuth, Whalen, Sullivan, Nading, Shelley, & Wang, 2007) while other studies have shown higher rates for males (Astin, 1975; Jaeger & Hinz, 2008; Magolda, 1990). Other studies have found no differences between men and women in measuring drop-out rates (Herzog, 2005; Marsh, 2014; Pike, Hansen, & Childress, 2014). These varied results may be related to other underlying factors. In Leppel's (2002) study, having children had a significantly negative effect on the retention rates of men but for women it had a significantly positive effect.

Another student characteristic that has been examined in studies related to retention is race/ethnicity with many results indicating that ethnic minorities are less likely to be retained. Education Trust, a non-profit organization based in Washington, DC, examined data from the Integrated Postsecondary Education Data System and found that 60% of underrepresented minority students are not retained at their institutions long

enough to complete a bachelor's degree within six years (Blankenship, 2010). Lewallen (1993) examined data obtained from Cooperative Institutional Research Program (CIRP) surveys of 27,064 students from 433 different postsecondary institutions and determined that being white was more positively associated with higher retention rates. Likewise, studies by Galicki and McEwen (1989) and Keller and Rollins (1990) showed decreased retention rates for African-American students and higher retention rates for white students. Additional research has provided evidence of other ethnic groups that are at a higher risk of not being retained such as Native Americans (Brown & Robinson Kurpius, 1997; Fogel & Yaffe, 1992) and Hispanics (Arbona & Nora, 2007; Astin, Tsui, & Avalos, 1996). For students in ethnic minority groups, especially those who come from disadvantaged backgrounds, reduced retention rates may reflect the fact that these students tend to experience feelings of marginalization, face greater obstacles in overcoming the academic demands of college-level work, deal with financial hardships, and have difficulty finding an appropriate place in the social network of the institution (Tinto, 1993). A study by Hu and St. John (2001) showed a significant gap in the college grades earned the first year by African-American and Hispanic students in comparison to White students, contributing to lower retention rates for these groups of minority students.

Some research has explored the relationship between students' age and rates of retention. Several studies have shown that older students are less likely to be retained at their institution than younger students (Brown, 2002; Grosset, 1991; Leppel, 2002). A commonly used definition for non-traditional students proposed by Bean and Metzner

(1985) encompasses students enrolled in postsecondary education aged 25 and older. Greater populations of non-traditional students can be found at two-year institutions such as community colleges or in four-year institutions with a large population of commuter students (Grosset, 1991). Samuels, Beach, and Bierlein Palmer (2011) posited that "non-traditional students often have jobs, families, community involvement, financial problems, and other external issues that compete with their academic involvement for their time, money, and energy" (p. 352). Older students place a greater emphasis on academic integration and consider classroom learning experiences and relationships with faculty to be of significant importance (Samuels et al., 2002).

Other studies have focused on first generation students and the likelihood that they will persist to the second year (Choy, 2001; Collier & Morgan, 2008; Ishitani, 2003; Ishitani, 2006; Riehl, 1994). Collier and Morgan (2008) defined "first generation" as college students for whom neither parent had completed a four year higher education degree and identified first generation students as a group that is at high risk of withdrawing from postsecondary institutions within the first year of study. Research has shown that first-generation students tend to be less academically prepared, are more likely to have taken a less rigorous high school curriculum, and demonstrate lower math, reading, and critical thinking skills necessary to be successful in college (Choy, 2001). Riehl (1994) determined that first-generation students were less confident in their ability to perform well academically in college. Research by York-Anderson and Bowman (1991) showed that first-generation students did not receive strong support from their parents when deciding whether or not to pursue postsecondary education. However,

findings from other studies regarding GPAs earned in college have been inconsistent. Studies by Inman and Mayes (1999) and Strage (1999) indicated that there were no significant differences in college GPA averages that first-generation students earned when compared to students whose parents held a college degree. Despite inconsistencies in research findings regarding academic performance of first-generation students compared to their counterparts, previous studies have shown that first-generation students are more likely to have lower first-to-second year retention rates than their peers (Choy, 2001; Ishitani, 2003; Ishitani, 2006; Riehl, 1994).

Out-of-state students tend to have lower retention rates than students who live in-state (Herzog, 2005; Whalen, Saunders, & Shelley, 2010; Wohlgemuth et al., 2007). Students entering college from another state or country may find that distancing themselves from close relationships with family and friends is too difficult and choose to leave their college or university if they are unable to form close relationships in their new environment (Tinto, 1993). Some research has explored the relationship between socioeconomic status and student retention rates. Studies by Braunstein, McGrath, and Pescatrice (2000) and Ishitani (2006) found that students with lower family incomes were less likely to be retained than students with higher family incomes. A study by Field and Morgan-Klein (2013) examined the question of social class in relation to higher education and found that many students from working-class and middle-class backgrounds continue to face challenges with access to higher education and success once enrolled. Additionally, research on working-class students enrolled at six large, public, research universities found that working-class students spent less time on

academic activities, worked less collaboratively with peers or tutors, and had weaker math and English skills which placed them at greater risk for dropping out of college (Soria, Stebleton, & Huesman, 2013).

Other bodies of research have looked at academic preparedness and other measures that may indicate a student's likelihood to remain enrolled after their first year of college. Many studies have shown a positive correlation between retention rates and indicators such as prior academic performance (Friedman & Mandel, 2009; Herzog, 2005), high school class rank (Ishitani, 2006; Wohlgemuth et al., 2007), and college entrance aptitude scores (Astin & Oseguera, 2005; Cragg, 2009; Marsh, 2014; Nora, Barlow, & Crisp, 2005; Pike et al., 2014; Wohlgemuth et al., 2007). Greene and Forster (2003) found that almost a third of high school graduates are not prepared to enter a four-year college or university. Research by House (2000) determined that students entering postsecondary institutions with higher high school GPAs and standardized test scores had a significant and positive relationship with academic performance and student retention during the first year. Underprepared students entering college may lead to higher rates of students needing remedial education which has a negative correlation with student persistence and completion. Students with the academic aptitude to succeed in college are likely to perform better and gain more knowledge. Tinto (1993) stated that "other things being equal, the more students learn, the more likely they are to persist, even after controlling for student attributes" (p. 131). Astin and Oseguera (2005) also found that students with high levels of academic and extracurricular involvement in high school were more likely to be retained throughout college to graduation.

Studies have also shown that the characteristics of the institution itself can have a significant effect on retention rates. Researchers have conducted studies that examine the retention rates of students in relation to the type of institution they are attending (Hu & St. John, 2001). The research shows that four-year institutions have higher retention rates than two-year institutions (Hu & St. John, 2001) and private institutions perform better than public institutions (Bradford & Farris, 1991; Hu & St. John, 2001; Ryan, 2004). Institutions that are more selective demonstrate higher retention rates than those that are less selective (Kim, Rhoades, & Woodard, 2003; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007; Marsh, 2014). The size of the institution itself may be a factor with very large institutions making it more difficult for students to integrate socially and academically, leading students to feel isolated and more likely to leave (Tinto, 1993). Students who live on-campus tend to have higher retention rates than students who commute or live off-campus (Gansemer-Topf, Kollasch, & Sun, 2015; Herzog, 2005; Pacarella & Terenzini, 2005; Ryan, 2004) which indicates that more residential types of institutions have higher retention rates than commuter-based colleges or universities. Some research has explored the relationship between institutional expenditures and student persistence. Ryan (2004) examined data from 363 Carnegie-classified Baccalaureate I and II institutions, and found that instructional and academic support expenditures had a significant and positive effect on student persistence and degree attainment.

The transition from high school to college is an area that has received increased attention in recent years as institutional leaders aim to improve this stressful experience

for new students. Some studies have looked at social integration into college, while others have focused on academic integration. Improved academic integration can be achieved through connections with faculty members and other academic support services (Pascarella & Terenzini, 2005). Tinto echoed the importance of the academic climate of an institution, saying that "academic climates that discourage and discriminate…give rise to student failure and departure" (1993, p. 74). Research by Grosset (1991) showed that for many students, academic integration was more influential in regards to student retention than social integration. The importance of academic integration was echoed in findings by Davidson and Wilson (2013), especially for commuter students and non-traditional students who may not place as much emphasis on social integration. Stevenson, Buchanan, and Sharpe (2006) argued that "much of academic engagement occurs in the classroom where faculty and students interact over disciplinary subject matter" (p. 144).

College-related factors during a student's first year in school may have a significant impact on their retention rates as well. Arbona and Nora (2007) found that students who were enrolled full-time and had higher first-year college GPAs were more likely to persist at their institution. Herzog (2005) found that students who received better grades or who passed a first-year math course during their first semester at school were the two most important factors in reducing the risk of dropping out of college. A study by Pascarella, Seifert, and Whitt (2008) determined that students who received organized and clear instruction in their courses significantly increased their likelihood to be retained at their institution. Survey respondents at a community college in the

Midwest United States indicated several first-year college experiences that contributed to their intention to leave the institution such as dissatisfaction with the teaching of courses and difficulties scheduling classes (Polinsky, 2003). The method by which students take courses may be correlated with retention with students enrolled in face-to-face courses more likely to be retained than students taking online courses (Finnegan, Morris, & Lee, 2008). Class size is also a factor in student retention. Studies have shown a significant negative effect of class size on a student's likelihood to persist at their institution (Eagan & Jaeger, 2008). The total number of credit hours a student takes their first year may be a factor in student retention with the odds of being retained increasing as the number of hours attempted increases (Jaeger & Hinz, 2008).

Numerous efforts have been made by institutional leaders to aid social and academic integration by improving students' experiences during their first year in college. Students who are engaged in their own learning process, who understand what they are learning, and who find value in the knowledge they acquire are more likely to be successful in college (Copeland & Levesque-Bristol, 2011). Several studies have been conducted in this area attempting to address the effects that programmatic efforts such as living and/or learning communities (Johnson, 2000; Kurotsuchi-Inkelas, Daver, Vogt, & Brown Leonard, 2007; Purdie & Rosser, 2011; Zhao & Kuh, 2004), first-year seminars (Goodman & Pascarella, 2006; Porter & Swing, 2006; Schnell & Doetkott, 2003; Williford, Cross-Chapman, & Kahrig, 2001), and special intervention programs (Bai & Pan, 2009; Purdie & Rosser, 2011) have had on student retention rates.

With living/learning communities, students are typically grouped according to a shared interest or theme such as academic major (Nursing), educational theme (service-learning), or student characteristic (first-generation) and enroll in one or more classes together and may even live together in the same area of a residence hall or dormitory (Purdie & Rosser, 2011). Researchers have found that students who participate in learning communities have an easier transition into college and a greater likelihood in being retained at their institutions (Kurotsuchi-Inkelas et al., 2007; Purdie & Rosser, 2011; Whalen et al., 2010). A study by Zhao and Kuh (2004) determined that learning communities were positively associated with increases in academic skills and competencies, overall college satisfaction, and first-year academic performance. Tinto (1997) found that students enrolled in learning communities had greater developmental gains and increased involvement in a range of academic and social activities during their first year. Faculty involved in living/learning communities play an important role in aiding students in their academic and social integration into college by serving as mentors, expert guides, and early detection agents for students needing academic assistance (Johnson, 2000).

Although the structure of first-year seminars may differ by institution, the most common feature shared by these programs is a regularly scheduled meeting time with a particular instructor for newly enrolled first-year students (Goodman & Pascarella, 2006). Porter and Swing (2006) surveyed over 20,000 first-year students enrolled in first-year seminars at 45 postsecondary institutions regarding their intentions to persist at their respective institutions and found higher intent-to-return rates for students who

participated in these programs. Likewise, Schnell and Doetkott (2003) found that first-year seminar participants not only had higher first-to-second-year persistence rates than non-participants, but also maintained higher retention rates for the next two years as well. Additional benefits for first-year seminar students include "increased student-faculty interaction, increased involvement in cocurricular activities, and increased academic satisfaction" (Goodman & Pascarella, 2006, p. 28). Research by Wright Sidle and McReynolds (2009) determined that students enrolled in first-year experience courses earned higher first-year cumulative college GPAs, completed a greater percentage of their general education requirements, and had a higher ratio of earned credit hours to attempted hours. Bai & Pan (2009) found that students who participated in special advising programs were 24% more likely to be retained after the first year than students who only participated in the general orientation. Similar results were found in a study by Purdie and Rosser (2011) when students enrolled in a specially designed two-credit course aimed at teaching first-year students learning strategies and other information useful in the college transition process demonstrated an increased likelihood to be retained to their sophomore year.

Instructional Faculty in Postsecondary Institutions

Numerous studies have been conducted on various aspects of part-time faculty appointments. Most of the early research on part-time faculty focused on topics such as the demographic make-up of part-time faculty, issues related to satisfaction, and salary inequities. In *The Invisible Faculty*, Gappa and Leslie (1993) used data obtained from the 1988 National Study of Postsecondary Faculty (NSOPF) to provide a comprehensive

look at part-time faculty in higher education including information on demographics, work conditions, educational background, and satisfaction. Their findings showed that part-time faculty are more likely to be female than male, predominantly White, younger in age, and to teach mostly undergraduate students. Gappa and Leslie (1993) also reported on the motivations faculty have for holding part-time appointments such as supplementing their income, the enjoyment of working in the academic field, finishing part-time degrees, and the inability to find full-time work. Conley, Leslie, and Zimbler (2002) published another comprehensive report on part-time instructional faculty and staff using updated data collected by the NCES through their 1993 National Study of Postsecondary Faculty. Data from this study showed similar findings to those published by Gappa and Leslie in regards to part-time faculty demographics, age, race/ethnicity and teaching of undergraduate students. Additionally, data from the 2002 report by Conley et al. showed that part-time faculty are generally satisfied overall with their positions but are dissatisfied with certain aspects of their jobs such as the opportunity to advance in their positions, the lack of job security, and insufficient benefits.

At many institutions, part-time faculty are paid by the credit hour or by the number of courses taught, neither of which provides a strong incentive for part-time faculty to put forth the effort to be present for their students or actively involved in their institution (Jacoby, 2006). In response to this type of pay structure, many part-time faculty teach multiple courses at one or more postsecondary institutions in order to earn a livable wage (Nutting, 2003). Research by Kezar (2013) highlighted additional concerns of part-time faculty such as the inability to design their own curriculum, choose their own

textbooks, set their own schedules, or receive institutional or departmental support. Many part-timers face a lack of resources from their institutions, such as office space, computers, and office supplies which can hinder their ability to meet with students, complete course-related work, and store materials on campus that are needed for teaching (Nutting, 2003). Lack of departmental resources and feelings of alienation from other faculty members can lead part-time faculty to become dissatisfied and less likely to form connections to their institutions and their students (Eagan et al., 2015). Also of concern is that part-time faculty members are less likely to hold a doctorate or other advanced degree (Bettinger & Long, 2010; Johnson, 2006). With the lack of support for professional development or research requirements, concerns have been expressed regarding the ability of part-time and non-tenure track faculty to stay current in their field of study and to advance the knowledge and skills needed to bring to the classroom (Kezar & Sam, 2011).

Higher education faculty typically divide their time, in some form or other, among three main activities: teaching, research, and service. Research has shown that part-time faculty reported teaching as their principal activity, particularly at the undergraduate level (Conley et al., 2002). Faculty survey respondents indicated that they spend time preparing new course materials, evaluating student work, attending campus lectures, presenting on research activities, and evaluating scholarly work (Shelton & Skaggs, 1996). Research by Jacobs (2004) used national faculty survey data to examine faculty work habits and found that most full-time faculty work over 50 hours per week regardless of faculty rank, gender, or type of institution. Part-time faculty respondents to the same

survey indicated that they worked over 30 hours per week, making them nearly full-time employees despite the fact that they do not receive equivalent pay or benefits for the hours worked (Jacobs, 2004). Changes in the higher education landscape has resulted in non-tenured faculty jobs to increasingly become similar in profile to those of tenure-track faculty, without the specific requirements of research and scholarly publications (Kezar & Sam, 2011). Conley et al. (2002) examined NSOPF data and found that three-quarters of part-time faculty had employment at more than one institution.

Reasons behind the increased use of part-time faculty in institutions of higher education are numerous and varied. In many cases, the greater reliance on part-time faculty has been used as a cost-cutting measure for institutions with an eye on fiscal constraints (Baldwin & Wawrzynski, 2011; Benjamin, 2002; Bettinger & Long, 2010). Anderson (2002) found that the use of adjuncts can aid in keeping the size of undergraduate courses smaller and gives academic departments the ability to increase or decrease the number of courses offered based on changes in enrollments. Many tenured and tenure-track faculty are hired for their specialization within certain research areas and teach a set number and type of courses. Hiring part-time faculty to teach classes may free up full-time tenured/tenure-track faculty to focus more time on research, scholarly publications, and service to the institution (Bettinger & Long, 2010). Utilizing part-time faculty may allow colleges and universities to hire instructors that have a broader range of experience and credentials than traditional tenure-track appointments (Baldwin & Wawrzynski, 2011). Part-time faculty bring experience from working in the field and specialized knowledge that can be passed along to students in the classroom (Nutting,

2003). The flexibility that comes with using part-time faculty to test academic courses without fully committing resources as well as the ability to incorporate part-time faculty on an as-needed basis to address vacancies and enrollment changes makes the use of adjunct faculty attractive to institutional and departmental leaders without consideration of the implications this may have in the long run (Bland, Center, Finstad, Risbey, & Staples, 2006; Eagan & Jaeger, 2008).

Inherent aspects of part-time appointments including job insecurity, lack of benefits, low salaries, and fewer opportunities for advancement could have negative effects on the performance of faculty members holding these positions (Thompson, 2003). Studies in the areas of faculty productivity have shown the effects of faculty appointment type on the amount of research produced, the commitment that faculty have towards their positions, and the amount of hours worked per week (Bland et al., 2006). Using 1999 NSOPF data on faculty employed at Research and Doctoral institutions, Bland et al. (2006) determined that tenured faculty spend more time on research and scholarly activities as well as direct teaching activities, while non-tenured faculty allocated more time to giving individual student instruction and advising students.

The Role of Academic Discipline in Higher Education

Research related to academic discipline may increase the understanding of the influences that disciplinary structures may have on student and faculty thoughts and behaviors (Feldman et al., 2000). Students' beliefs regarding their own intellect and academic abilities have been found to be correlated with academic performance, and studies have shown that students' beliefs can predict their academic performance in

several disciplines, including English, education, psychology, and health sciences (House, 2000). Research examining the relationship between students' academic major and retention rates have had mixed results. Studies by Daempfle (2003), Seymour and Hewitt (1997), and Strenta, Elliott, Russell, Maltier, and Scott (1994) have shown students majoring in academic fields such as science, mathematics, and engineering have lower retention rates than students in other academic areas. In contrast, research by Gansemer-Topf et al. (2015) examined differences between students in STEM majors (science, technology, engineering and math) and non-STEM majors and found that students in STEM majors had higher retention rates. Wohlgemuth et al., found that students enrolled in the College of Liberal Arts and Sciences were less likely to be retained after their first year.

Some studies have shown variances in faculty composition and utilization by academic discipline. A study by Johnson (2006) showed that part-time faculty were most often the primary instructors of record in academic areas such as nursing and education. Other research has shown a greater percentage of part-time and non-tenure track faculty employed in disciplines such as English and math (Kezar, 2013) and the humanities (Conley et al., 2002). Non-tenure track faculty employed in professional fields are more often included in departmental activities and treated similar to tenured/tenure-track faculty while other fields such as Arts and Sciences do not treat non-tenure track faculty as equals (Gappa & Leslie, 1993; Schuster & Finkelstein, 2006).

A recent study by Kim and Sax (2014) examined the effects of student-faculty interactions on students' academic self-concept by academic major. Findings indicate

that there are significant differences by discipline in all aspects of student-faculty interactions. Students in artistic majors such as Arts, Languages, and Literature were more likely to interact with faculty outside of class, receive faculty mentoring, challenge faculty in class, and experience satisfaction with faculty contact than students in enterprising disciplines such as Business, Journalism, and Finance (Kim & Sax, 2014). Research by Robst, Keil, and Russo (1998) found a positive relationship between female students enrolled in math and science classes taught by female faculty members and their likelihood to remain enrolled at the institution. Math, science, and engineering departments are often cited as having relatively few female faculty members and students, thereby creating the need for role models for female students in these disciplines (Robst et al., 1998).

Research Connecting Student Learning Outcomes and Interactions with Faculty

Several studies have addressed the nature of part-time faculty positions and the implications that could have on student learning and teaching effectiveness. Part-time faculty members have taken on duties normally carried out by full-time faculty such as academic advising, instruction of remedial or developmental courses, curriculum development, and committee assignments (Harrington & Schibik, 2004). In addition, academic leaders expect part-time faculty members to teach a wide variety of courses, often with very little time to prepare, which may cause the quality of instruction that students receive to suffer (Nutting, 2003). While the majority of part-time faculty assignments are primarily dedicated to teaching, their responsibilities tend to be less complex, causing faculty holding these positions to either be replaced or not have their

contracts renewed (Schuster, 2003). This lack of consistency makes it difficult for faculty members to become more fully integrated with their students and their institutions and can be detrimental to students who may need to make changes to their course schedules as a result (Nutting, 2003).

Schuster (2003) also demonstrated that part-time faculty members bring less scholarly authority in terms of publications to their teaching positions which could detract from students' learning experiences. However, Nutting (2003) indicated that the out-of-classroom experience that many part-time faculty members bring with them can have a positive influence on students. Other research on factors related to part-time faculty such as accessibility to students, student advising, inability to prepare sufficiently for teaching assignments, lack of professional development opportunities, and insufficient involvement with colleagues inside and outside of the institution could all have adverse influences on the effectiveness of part-time faculty as teachers and advisors (Kezar, 2013). Several studies have examined the impact that contingent faculty have on areas of undergraduate education such as class structure and preparation, interactions faculty have with students, and expectations for academic performance (Umbach, 2007). The results of these studies have been inconclusive with some showing outcomes that reflect positively on part-time faculty, some reflecting more positively on full-time faculty, while others have shown no significant difference at all.

Bettinger and Long (2010) conducted a study that looked at the relationship between instructor type on student course-taking patterns and subsequent interest in subjects. Results of the study showed that part-time faculty had a significantly positive

impact on students taking credit hours in subsequent courses in the fields of education, engineering, and sciences. Burgess and Samuels (1999) found that for students taking sequential courses in the same subject, part-time instructors were less likely to prepare their students to be successful in later courses taught by full-time instructors. Undergraduate students who took an introductory course from a part-time faculty member and then a subsequent course from a full-time faculty member were significantly less likely to either complete the second course or to earn a grade of "C" or better. In contrast, a study by Figlio, Schapiro, and Soter (2013) specifically looked at differences between tenured/tenure-track faculty and non-tenure track faculty and found that students taking courses from non-tenure track faculty were more likely to enroll in subsequent courses in that subject and to perform better in the subsequent classes than with tenure track faculty. Additionally, Hoffman and Oreopoulous (2009) conducted a study at a large Canadian university and found that faculty characteristics such as full-time/part-time status, research activity, tenure status, and salary have no significant influence on the likelihood that students will either drop a course or be inclined to take a subsequent course in the same subject. Data from their study showed that student responses regarding the effectiveness of instructors collected on course evaluations were a better indication of instructor influence on students.

The academic instruction that students receive inside the classroom is an important influence on students' academic success and achievement. Students spend a great deal of their time in the classroom which can be classified as a smaller community within the larger institution, consisting of faculty and students (Tinto, 1993). Research

by Grosset (1991) showed that "classroom experiences, related to interest in the course content, intellectual stimulation, and participation were strongly associated with persistence in the next semester" (p. 174). Classrooms are comprised of students with diverse learning styles, requiring faculty instructors to incorporate teaching strategies that will accommodate students' strengths and weaknesses (Grosset, 1991). A study by Baldwin and Wawrzynski (2011) determined that part-time faculty were less likely to incorporate technology in their classrooms and to use learning-centered strategies (group projects, oral presentations, or research papers) with their students.

Students' institutional commitment, integration, and persistence are enhanced when faculty use active learning techniques in the classroom (Braxton, 2008; Braxton, Jones, Hirschy, and Hartley, 2008). Nelson Laird, Chen, and Kuh (2008) found that schools with higher levels of students engaging in collaborative learning and academic challenge (the amount of reading, writing, and higher-order thinking students do for class) had higher-than-expected retention rates. Research by Seymour and Hewitt (1997) and Strenta, et al. (1994) revealed that students who have negative classroom experiences such as unfriendly classroom environments, dull lecturing, poor academic advising, and uncaring faculty are inclined to switch majors or leave college altogether. Carell and West (2010) examined the quality of faculty instruction and determined that as professor quality increases, so does student achievement. Surveyed students in science, math, and engineering fields strongly believed that faculty placed a greater emphasis on research over teaching, did not value teaching as a professional activity, and did not seem to like teaching (Seymour & Hewitt, 1997). Eagan and Jaeger (2008) posited that students

exposed to greater levels of classroom instruction by part-time faculty have fewer meaningful interactions than students exposed to full-time faculty therefore will be less academically integrated.

Additional research by Benjamin (2002) found that part-time faculty used teaching methods that were less challenging for their students. Umbach (2007) determined that part-time faculty had a negative impact on undergraduate education with part-time faculty using fewer active learning techniques, spending less time preparing for their classes, and having fewer interactions with their students than full-time faculty. At many institutions, part-time faculty members do not undergo annual evaluations and do not receive feedback on ways they may be able to improve their classroom teaching or adapt their curriculum to better meet student needs (Benjamin, 2002).

During the first year of college, most students take introductory level courses. These first-year courses can be seen as a gateway to subsequent progression over their academic careers and "as a result, they, more than any other classes, must emphasize and encourage active student involvement in the intellectual and social life of the classroom" (Tinto, 1993, p. 134). Gateway courses can be a hindrance to student retention because students who do not succeed in these initial courses may end up changing their field of study, especially in areas of science, engineering, and math, transfer to another postsecondary institution, or leave higher education altogether (Eagan & Jaeger, 2008). Researchers have found that part-time faculty members teach a disproportionate amount of courses taken by first-year students (Benjamin, 2002; Harrington & Schibik, 2004). Results of the study by Harrington and Schibik (2004) at a public comprehensive

Midwestern university showed that overall, first-time freshmen took 48% of their first semester courses with part-time faculty. A study by Jaegar and Eagan (2011) also showed that over half the credits taken by first-year students across type of institution were taught by a contingent faculty member. In addition, Landrum (2009) found a significant association between faculty status and the proportion of lower division undergraduate courses taught as well as the likelihood of faculty having an office on campus. Reichard (2003) pointed out that a large majority of undergraduate general education courses are taught by contingent faculty and argued that these courses need instructors who are knowledgeable in course content and concerned with teaching theories.

In addition to introductory courses, many first-year students who are underprepared for college-level work need to take remedial courses upon entering college. Studies have shown that the majority of developmental or remedial courses are taught by part-time faculty (Shults, 2000). Concerns have been raised because students enrolled in remedial classes are the ones most in need of attention, care, and assistance and these courses are being taught by instructors who are least involved in the institution (Burgess & Samuels, 1999). Research by Boyer, Butner, and Smith (2007) using faculty workload data from the 1999 National Study of Postsecondary Faculty found that faculty had more contact with students and taught more credit hours to students in nonremedial classes than students in remedial classes. In a study of students taking remedial math courses at a community college, Bolge (1995) determined that there was no significant

difference in student learning between classes taught by full-time faculty versus part-time faculty.

Faculty interactions with students both inside and outside of the classroom may influence students' academic integration into their college or university which is just as important as social integration in retaining students. Tinto (1993) argued that student retention "is as much an academic matter, one that concerns the faculty as much as it might concern those in student affairs" (72). Research examining faculty interactions with students inside and outside the classroom have been incorporated into retention research since the 1970's (Terenzini & Pascarella, 1979). Leppel (2002) found that students who responded on surveys that they had higher levels of contact with faculty members outside of class as well as greater discussions about academic matters were more likely to be retained at their institution. A study conducted by Grosset (1991) at a large urban community college used data collected from students via questionnaires regarding the number of times during the most recent academic term that they had had contact with faculty members outside the classroom for either academic (curricular concerns, career goals, and course-related topics) or nonacademic (personal problems or campus-related issues) purposes. Likewise, Lillis (2011) found that the more frequently students interacted with faculty outside the classroom, the greater the students' indications were that they would remain at the institution.

Of concern is the amount of time that part-time faculty expend in assisting their students outside of class. Previous studies have shown that part-time faculty devote less out-of-class time to students than full-time faculty do and are less likely to hold sufficient

office hours (Benjamin, 2002; Conley et al., 2002). Research has also shown differences in part-time faculty and student interaction in relation to type of institution, with research universities showing the least amount of student-faculty interaction (Eagan & Jaeger, 2008). The findings of these studies raise concerns regarding the implications on student learning and achievement that could occur with reduced access to faculty both inside and outside the classroom.

Research has demonstrated that positive relationships between students and faculty have resulted in increased motivation for students (Jaasma & Koper, 1999; Komarraju, Musulkin, & Bhattacharaya, 2010; Martin, Myers, & Mottet, 1999; Myers, 2004; Wolf-Wendel, Ward & Kinzie, 2009). Students who develop close relationships with even one faculty member are more likely to be satisfied with their college life and have higher career aspirations (Komarraju et al., 2010). A study by Hong, Shull, and Haefner (2011) explored the relationship between students' perceptions of faculty and first-year retention. Outcomes of the study showed that 50% of survey respondents felt that faculty caring was a critical factor in their decision to persist. On the other hand, infrequent or negative relationships with faculty members can have a negative impact on student perceptions leading to adverse effects such as student withdrawal (Komarraju et al., 2010; Wolf-Wendel et al., 2009). Contact with faculty members may influence a student's perception regarding the degree of commitment that is being given to them by representatives of the institution and students may not want to stay if they do not feel valued (Tinto, 1993). Lundquist, Spalding, and Landrum (2002) surveyed students about faculty attitudes and behaviors and found that responses to questions about leaving were

best predicted by scores on survey items regarding faculty lack of support, faculty members not responding to phone calls or emails in a timely manner, and professors who seem unapproachable.

Other studies have examined the effects of part-time faculty on student outcome measures such as retention and graduation rates. Research on student retention rates has provided inconclusive evidence. Kehrberg and Turpin (2002) examined the relationship between students' exposure to part-time instructors and the implications that had on retention rates and college GPA. Findings from this study showed that any negative associations between part-time faculty and student success measures disappeared once they controlled for variables representing academic preparation and first-year experience. Additionally, a similar study by Ronco and Cahill (2006) at a public research-intensive university examined the relationship between type of instructor and student outcomes measures including first to second year retention, academic achievement, and student ratings of instruction. Findings showed that students taking more of their courses from part-time faculty were less likely to be retained to the second year and had lower GPA's. However, after controlling for variables related to student background (gender, race/ethnicity, high school GPA) and enrollment experience (living on campus, financial aid received, and college of major), Ronco and Cahill (2006) found that type of instructor actually added very little value to the findings.

A study conducted by Johnson (2006) at a single Midwestern public research university looked at the effects of exposure to part-time faculty on undergraduate retention rates. The findings from this study indicated that the impact of part-time faculty

on retention rates is marginal and actually disappeared after controlling for other student characteristics. Similar results on first-year student retention were found in a study conducted at a large research university that looked at several freshmen cohorts (Hinz, 2005). Other studies did indicate significant differences in the retention of students based on the status of the faculty teaching their courses (Burgess & Samuels, 1999; Harrington & Schibik, 2004; Jaeger & Eagan, 2011; Jaeger & Hinz, 2008). Jaegar and Eagan (2011) examined the relationship between faculty type and student retention rates across type of institution and found a significant, negative relationship between part-time, contingent faculty and student retention rates at doctoral-extensive, Masters-I, and baccalaureate institutions. Other studies looked at the amount of exposure to part-time faculty during the first year and determined that students who took a higher percentage of their courses from part-time faculty in their first semester were less likely to persist to their second year (Bettinger & Long, 2006; Harrington & Schibik, 2004; Jaeger & Hinz, 2008).

There have been a few studies going beyond first-year student retention for a longer look at student success that examined the relationship between the use of part-time faculty and student graduation rates. Ehrenberg and Zhang (2005) used data obtained from the College Board to look at the proportion of part-time faculty and student graduation rates and found there was a significant adverse effect on six-year graduation rates at four-year colleges, especially public master's level institutions. Research conducted by Jacoby (2006) examined the effects that the employment of part-time faculty had on graduation rates at community colleges. The findings of this study indicated that there was a highly significant and negative effect on graduation rates as the

ratio of part-time faculty increased. Both of these studies used national data sets which provided data on graduation rates and faculty at the institutional level and were therefore limited in the variables that were available to them that could have provided additional analysis.

Summary

The review of the research regarding student retention, instructional faculty at institutions of higher education, and the relationship between students and faculty provides the readers with broad exposure to the foundational knowledge that is pertinent to this study. Prior research on student retention demonstrates the variety of factors that can influence first-year students' decisions to remain enrolled at college. Studies related to instructional faculty at colleges and universities show that there are various types of faculty who teach at postsecondary institutions and the reasons why different types of faculty are used. Finally, studies regarding the relationship between students and faculty demonstrate the connection between the two entities and how that may influence student achievement in the classroom as well as measurements of student success in regards to retention and graduation.

Chapter Three: Method

Overview

The literature review in Chapter Two highlighted the limitations that exist in studies examining the relationship between first-year student retention rates and type of instructor. What information that has come out of research regarding this issue has been inconclusive because some studies have found no significant relationship between faculty type and student retention while other studies did indicate that as the level of exposure to part-time faculty increased, the retention rates of first-year students decreased. The current study adds to prior research by expanding on the variables related to faculty instructors and by profiling academic colleges whose faculty composition reflects the changing landscape of faculty appointments in institutions of higher education today. This chapter will provide an overview of the research setting, an outline of the variables used in the study, and a description of the statistical procedures used to analyze and interpret the results.

Setting and Participants

The proposed study was conducted at a large four-year public, research university categorized as a Doctoral/Research – High Activity institution by the Carnegie Classification System. The institution is located in the Midwestern United States and enrolls about 23,000 undergraduate and graduate students at its main campus. The university is moderately selective in its admissions criteria with some exceptions allowed to address access opportunities. However, out-of-state students and students applying to certain academic programs must meet more selective entrance criteria. Most of the

students enrolled at the university are at the undergraduate level and are residents of the state in which the university is located. The main campus is a largely residential campus and undergraduate students are required to live in on-campus residence halls for their freshman and sophomore years. Incoming first-year students are predominantly traditional-age students. The undergraduate population is over fifty percent female and close to eighty percent of the students have a race/ethnic category of White.

Students enrolled at the university are assigned to one of eight academic colleges based on their major field of study. The grouping of academic colleges that include disciplines in the fields of business, communication studies, engineering, and visual or performance arts have more selective admissions criteria than the other colleges. Incoming first-year students enrolled in those colleges tend to score higher on their incoming academic performance measures such as ACT and high school GPA. The university employs about 1,400 full- and part-time faculty at its main campus with about 52 percent of its faculty either tenured or on the tenure-track. The colleges with communication majors (61.2%) and engineering majors (69.3%) have the highest percentages of full-time, tenured/tenure-track faculty, while colleges with education majors (38.1%) and health sciences majors (27.7%) have the lowest. In the fall of 2014, tenured/tenure-track faculty taught approximately 41% of all credit hours taken by undergraduate students. Non-tenure track instructional faculty taught 26% of undergraduate credit hours while part-time term faculty and graduate assistants accounted for about 18%. The most recent first-to-second year retention rate for first-time, full-time

degree-seeking students was 79% and has been relatively stable since 2003, fluctuating by only one or two percentage points each year.

The student participants in this study include the population of all 1,984 matriculated undergraduates who entered the university in the fall term of 2014 who had majors in the selected disciplines. Participants were registered as of the fifteenth day of classes as full-time students in a degree-seeking field of study in the academic colleges housing social sciences, natural sciences, education, and health sciences disciplines. Undergraduates are considered full-time if they are enrolled in twelve or more semester hours in a given academic term. In addition, the population of all full- and part-time faculty employees who were listed as the instructor of record in the student information system for all courses taken by the incoming first-year cohort were included in the study as well.

Research Design and Data Collection

Multiple variables were incorporated for the proposed study in regards to both student and faculty data and have been chosen based on prior first-year retention study results. Student background characteristic variables associated with student retention rates include gender (Astin, 1975; Leppel, 2002; Mortenson, 2001; Tinto, 1993), race/ethnicity (Arbona & Nora, 2007; Blankenship, 2010; Hu & St. John, 2001; Lewallen, 1993), residency status (Herzog, 2005; Whalen et al., 2010; Wohlgemuth et al., 2007), age (Brown, 2002; Grosset, 1991; Leppel, 2002), first-generation status (Choy, 2001; Collier & Morgan, 2008; Ishitani, 2003; Ishitani, 2006; Riehl, 1994), and major field of study (Daempfle, 2003; Seymour & Hewitt, 1997; Strenta et al., 1994). In

addition, student academic performance variables such as prior academic performance (Friedman & Mandel, 2009; Herzog, 2005), college entrance aptitude scores (Astin & Oseguera, 2005; Cragg, 2009; Marsh, 2014; Nora et al., 2005; Pike et al., 2014; Wohlgemuth et al., 2007), and high school class rank (Ishitani, 2006; Wohlgemuth et al., 2007) may be indicators of a student's likelihood to persist at an institution. Faculty characteristic variables included in the proposed study to determine if there is a relationship with student retention rates include gender (Pittman, 2010; Zimmerman, McQueen, & Guy, 2007), race/ethnicity (Einarson & Clarkberg, 2010; Pittman, 2010; Zimmerman et al., 2007), highest degree earned, years of service (Stonebraker & Stone, 20150, full-time/part-time status (Jaeger & Hinz, 2008), faculty rank, and type of faculty appointment (Bettinger & Long, 2010; Figlio et al., 2013; Ronco & Cahill, 2006).

The continuous variables, percentage of credit hours taken by each type of faculty, is a set of calculated fields that were added to the data set using variables from the course enrollment and faculty data. For each student included in the study, the total number of credit hours taken during their first year of enrollment was calculated. Next, additional variables were calculated to create the total number of credit hours the student took based on each type of faculty variable such as type of appointment (tenured/tenure-track, non-tenure track instructional, part-time term, visiting faculty, early retired, graduate assistants, and other instructors), employment status (full-time/part-time), gender, and faculty rank (full professor, associate professor, assistant professor, and instructor/lecturer). Finally, for each student record, the percentage of credit hours taken by each faculty variable was determined by taking the number of credit hours taken by

type of faculty and dividing that amount by the total number of credit hours in which the student was enrolled. For example, the record for a first-year student enrolled in 32 total credit hours during the 2014-15 academic year could have the following faculty type breakdowns: eight credit hours with tenured/tenure track faculty, four credit hours with non-tenure track instructional faculty, 16 credit hours with graduate assistants, and four hours with other instructors. That first-year student record would have four variables in the dataset with 25% credit hours with tenured/track faculty, 12.5% with non-tenure track instructional faculty, 50% credit hours with graduate assistants, and 12.5% with other instructors.

The dependent variable in this study is the retention rate of the student from the first fall term to the second fall term. The dichotomous dependent variable in the study was dummy coded in the data set and is equal to "1" when the student is retained at the institution for the following fall semester and "0" if the student is not retained at the institution. All other categorical and continuous variables used in the study are the independent variables and were selected as the predictors of student retention.

There are several different sources of the data used for this study. Students applying for admission to the university self-report their gender, race/ethnicity, and first-generation status on the on-line or paper application that is submitted. The data from the student application is imported into the student information system along with their birth date (to calculate age), home address (to determine residency), and the students' intended major field of study. Information regarding students' prior academic performance (high school GPA and class rank) is entered into the student information system from the

transcripts received from the students' high school or prior institution. Results from college entrance aptitude tests are received from the organization administering the test and/or from the high school transcript and also imported into the student information system. In the case of multiple tests, the highest score is used. Information regarding course enrollment data (course subject, credit hours taken, course GPA, academic term GPA, cumulative GPA, and the identification number of the instructor of record) is stored in the student information system.

Faculty members applying for a position at the university self-report their gender and race/ethnicity on the online hiring application at the time they submit their application for employment. Information regarding a faculty member's highest degree earned is obtained from either a resume or curriculum vitae that is submitted along with the application for employment at the institution. Information from the hiring application process is entered into the Human Resource Management System (HRMS). Information regarding faculty gender, race/ethnicity, and birth date (to calculate age) may also be collected electronically through an HRMS portal system at the time the employee attends an orientation session at the start of employment at the institution. Data collected electronically at the time of orientation is uploaded into the HRMS. Information regarding a faculty member's academic department, type of appointment, and faculty rank are verified by the departmental staff and entered into the HRMS.

This study was approved by the Institutional Review Board and a copy of the approval letter is presented in Appendix A. The student and faculty data for this study were provided by the Office of Institutional Research. Unit record data regarding student

enrollments and course enrollments are captured from the PeopleSoft student information system at a given point-in-time and stored on a centralized server maintained by the Office for Information Technology. Student enrollment data is captured on the fifteenth day of the fall semester and undergoes a thorough editing and validation process by Institutional Research office staff, including checks for incorrect data and missing fields to be used for all internal and external reporting for the university. Course enrollment data is captured after the fall semester has ended and grades have been entered into the PeopleSoft system and goes through a similar data editing validation and editing process by staff members in the Institutional Research Office. Faculty data is downloaded from the HRMS system by the Institutional Research office on November 1st of the current academic year and is stored on a shared network server maintained by the Office of Information Technology and accessible to Institutional Research staff. Faculty data is then edited and validated for internal and external reporting purposes.

For the proposed study, the Institutional Research office used Statistical Analysis Software (SAS) to merge student enrollment and course enrollment data files for the fall 2014 semester using the students' personal identification number. Faculty data were then merged into the student and course enrollment data set using the faculty members' personal identification number contained in both files. The Institutional Research office filtered the data set so that it only contained information regarding first-time, full-time, degree-seeking undergraduate students enrolled in the colleges that include the social sciences, natural sciences, education, and health sciences disciplines and their corresponding course enrollment and faculty background characteristic data. The fall

2014 first-year student cohort data was then matched, using the student personal identification number, with student enrollment data for fall 2015 to determine if the student was enrolled the following year. If a student remained enrolled in fall 2015 then the retention rate variable was set to "1". All identifiers were removed from the data set and replaced with randomly assigned identifiers so that the data remained anonymous for the purposes of data analysis for this study. The data set is compiled at the student unit record level with one row per student in the file for an unduplicated set of student records, each with associated instructional (e.g., faculty type) data.

Data Processing and Analysis

Numerous statistical analyses were conducted for this study. Analyses of faculty data was conducted to obtain information on background characteristics, faculty type, full-time/part-time status and faculty rank. Analyses on student data was performed to obtain information on background characteristics, academic preparation, and persistence rates. The overall relationship between exposure to type of instructor and student retention was examined as well as the first-year student retention rates for all those same variables.

The Statistical Package for Social Sciences (SPPSS) was used to conduct all the statistical analyses of this study. Descriptive statistics were calculated on both student and faculty variables to describe data regarding the composition of students and faculty included in the study and to provide frequencies, cross-tabulations and retention rates. Descriptive statistics were calculated to obtain the means and standard deviations for all of the independent variables. Point biserial correlation analysis between the independent

and dependent variables was examined to determine if significant relationships occurred among the independent variables and between them and the dependent retention variable. Finally, linear regression analyses were conducted to evaluate the relationship between exposure to faculty type and student persistence rates from the fall of their first year of enrollment to the fall of their second year of enrollment. Researchers have demonstrated the usefulness of linear regression when estimating the predictive ability of a set of variables on one outcome variable (Beeson and Kissling, 2001; Salomonson, 2005). There are different options for the type of regression analyses used with predictor variable. Logistic or multiple linear regression are often times the choice with a dichotomous variable with values of 1 and 0. For this study, since the fall retention rate dependent variable was dummy coded to be used as a nominal predictor and therefore treated as a ratio-level variable, the choice of linear regression was determined to be more informative than other types of regression analysis (Stevens, 1986). In this case, the linear regression analysis was used to determine how much of the variance on the dependent variable, fall retention, was accounted for by the predictor variables.

Summary

For this study, statistical data analysis was used to examine the relationship between first-year student retention rates and faculty type. The study used data sets from a single institution that incorporate variables related to student characteristics, course enrollment, and faculty characteristics. Statistical analyses were used to describe the participants of the study, to determine the variables to include in the study, and to identify any relationships between the dependent and independent variables.

Chapter Four: Results

Introduction

Student success is an important topic of research in higher education, especially as it relates to students obtaining degrees from colleges and universities. The crucial first step in this process is retaining students from their first year to their second year at the institution in which they enroll. A review of the research conducted in the area of first-year student retention has demonstrated a variety of factors that may be related to keeping students enrolled after their first year. Student-related variables such as gender (Jaeger & Hinz, 2008; Leppel, 2002; Marsh, 2014; Mortenson, 2001), race/ethnicity (Arbona & Nora, 2007; Blankenship, 2010; Hu & St John, 2001), residency status (Herzog, 2005; Whalen, Saunders, & Shelley, 2010; Wohlgemuth et al., 2007), first generation status (Choy, 2001; Ishitani, 2006; Riehl, 1994), and high school or college GPA (Friedman & Mandel, 2009; Herzog, 2005) have been shown in many cases to have a relationship to first-year student retention. Academic success is also crucial to the success of first-year students, so the interactions that students have with their instructors is also very important. The primary interest of this study was to investigate the relationship between first-year student retention rates and the type of faculty with whom they take their courses. Results of the analysis conducted with the institutional data set indicate that there are some relationships among the variables examined.

This study focused on the relationship between first-year retention rates and faculty type and was guided by the following research questions:

Research Question 1: Is there a relationship between first-year retention at a four-year public, research university and the type of faculty with whom students take their courses, controlling for student characteristics, student academic preparedness, and faculty characteristics?

Research Question 2: Are there differences among first to second year retention rates based on the proportionality of their coursework that students take from the different types of faculty?

Research Question 3: Are there differences among academic colleges in regards to the composition of their faculty and the subsequent retention rates of their first-year students?

Relationship between First-Year Retention and Type of Faculty

The data set consisted of 1,984 first-year students entering the university in the Fall of 2014 who were majoring in fields of study housed within the academic colleges of social and natural sciences, education, and health sciences. The overall retention rate for the cohort was 77.5%. Table 1 provides a breakdown of the student characteristics of the entering cohort along with the number and percentage of students from the cohort retained to their second year. Students in the entering cohort are predominantly female, white, and are residents of the state where the university is located. First-year retention rates are higher for female students in comparison to male students. Non-resident students had a slightly higher retention rate than first-year students who were residents. First-year retention rates vary across racial and ethnic categories. For the Fall 2014 entering cohort, Asian students had the highest first-to-second year retention rates, while

international students had the lowest. Measures of student aptitude also mirror previous studies with students in the lowest range of cumulative first-year university GPA having significantly lower retention rates than students in the higher GPA ranges.

Table 1

Descriptive Statistics and Retention Rates of Fall 2014 Entering Cohort

Characteristic	N	% of Cohort	Retained N	Retention Rate
Female	1,385	69.8%	1,084	78.3%
Male	599	30.2%	453	75.6%
Resident	1,786	90.0%	1,382	77.4%
Non-Resident	198	10.0%	155	78.3%
First-Generation	550	27.7%	400	72.7%
Not First-Generation	1,302	65.6%	1,037	79.6%
White	1,675	84.4%	1,301	77.7%
African-American	116	5.8%	94	81.0%
Asian	14	0.7%	13	92.9%
Am Indian/Native Amer	4	0.2%	3	75.0%
Hispanic	65	3.3%	43	66.2%
Two or More Races	84	4.2%	68	81.0%
International	17	0.9%	7	41.2%
Univ Cum GPA Below 2.0	215	10.8%	73	34.0%
Univ Cum GPA 2.0-2.99	701	35.3%	554	79.0%
Univ Cum GPA 3.0 & Up	1,042	52.5%	907	87.0%
Social/Natural Sci Majors	990	49.9%	737	74.4%
Education Majors	349	17.6%	289	82.8%
Health Sciences Majors	645	32.5%	511	79.2%

The first research question examined for this study focused on the relationship between first-year student retention and the type of faculty with whom they took their courses. Table 2 provides retention rates for first-year students in relation to the type of faculty from whom they took courses during their first year at the institution. Results presented in Table 2 are duplicated student unit record counts and reflect all the courses a student took their first year and the type of faculty who taught that course. The highest number of first-year students took courses taught by non-tenure track instructional faculty while the lowest number of students took courses with early retired faculty members. Conversely, first-year students taking courses from non-tenure track instructional faculty had the lowest retention rates while students who took courses from early retired faculty had the highest retention rates.

When examining retention rates for full-time instructors versus part-time instructors, results show that slightly more students took courses with full-time faculty but retention rates are higher for students who took courses from part-time faculty. Examination of the number of courses taken and the resulting retention rates for first-year students who took courses with male faculty in comparison to female faculty were almost identical so that faculty demographic variable was not included in subsequent analyses. However, the data did show noticeable differences in retention rates for first-year students in relation to the faculty rank that instructors held. Excluding graduate assistants and other types of instructors who do not have faculty status, first-year retention rates were highest for students who took courses with full professors and lowest for courses taught by assistant professors.

Table 2

1st-Yr Retention Rates for Fall Cohort by Type of Faculty Teaching Courses

Characteristic	N Took Courses	N Retained to 2nd Yr	Retention Rate
Tenure/Tenure-Track Fac	1,827	1,449	79.3%
Non-Tenure Track Instruct	1,885	1,468	77.9%
Part-Time Term Faculty	946	767	81.1%
Visiting Faculty	995	801	80.5%
Early Retired Faculty	56	49	87.5%
Graduate Assistants	1,691	1,343	79.4%
Other Instructors	1,278	1,006	78.7%
Full-Time Faculty	1,983	1,537	77.5%
Part-Time Faculty	1,919	1,506	78.5%
Male Faculty	1,984	1,537	77.6%
Female Faculty	1,976	1,534	77.6%
Full-Professor Rank	819	672	82.1%
Associate Professor Rank	1,634	1,305	79.9%
Assistant Professor Rank	1,819	1,425	78.3%
Instructor/Lecturer Rank	1,698	1,343	79.1%

Further examination of the variables related to type of faculty was conducted to determine if any of the demographic variables examined at the overall cohort level contributed to the differences in first-year retention rates. Tables 3 through 6 provide

breakdowns of first-year retention rates by faculty type and student variables related to gender, residency status, first generation status, and first-year cumulative college GPA ranges. Results of the analysis examining the faculty type in relation to student gender are presented in Table 3. First-year retention rates for female students by faculty type are similar to the overall retention rates in comparison to male students with female retention rates higher than males with every faculty type. However, the differences between female and male retention rates are significantly higher for credit hours taken with part-time term faculty, visiting faculty, and early retired faculty. First-year female students took the most credit hours with non-tenure track instructional faculty and the least number of credit hours with early retired faculty. In contrast, female retention rates are the lowest with non-tenure track faculty and the highest with early retired faculty. Male first-year students took the highest number of credit hours with tenured/tenure-track faculty and the least number of credit hours with early retired faculty. Male students have the highest retention rates with early retired faculty and the lowest retention rates with non-tenure track instructional faculty.

Table 3

First-Year Retention Rates by Faculty Type and Student Gender

	Female			Male		
	Total N	Retained N	Retained %	Total N	Retained N	Retained %
Tenured/Ten Track	1,258	1,011	80.4%	569	438	77.0%
Non-Tenure Track	1,329	1,047	78.8%	556	421	75.7%
Part-Time Term	661	549	83.1%	285	218	76.5%
Visiting Faculty	676	556	82.2%	319	245	76.8%
Early Retired	38	34	89.5%	18	15	83.3%
Graduate Assistants	1,190	955	80.3%	501	388	77.4%
Other Instructors	948	750	79.1%	330	256	77.6%
Full-Time Faculty	1,384	1,084	78.3%	599	453	75.6%
Part-Time Faculty	1,348	1,068	79.2%	571	438	76.7%
Full Professor Rank	528	441	83.5%	291	231	79.4%
Associate Professor	1,141	923	80.9%	493	382	77.5%
Assistant Professor	1,270	1,003	79.0%	549	422	76.9%
Instructor/Lecturer	1,220	972	79.7%	478	371	77.6%

When looking at full-time/part-time status, both female and male students took slightly more credit hours with full-time faculty but their first-year retention rates are higher with credit hours taught by part-time faculty. First-year retention rates broken

down by gender and faculty rank yield similar results to the full entering cohort. Both female and male students took the highest number of credit hours with Assistant Professors and the least amount of credit hours with Full Professors. Conversely, both female and male students have the highest retention rates with Full Professors and the lowest retention rates with Assistant Professors. Of the 1,385 female first-year students, only 528 students (38%) took credit hours with Full Professors while a significantly higher number of female students took credit hours with the other faculty rank groups (82% to 92%). Whereas, male students took 49% of their credit hours with Full Professors, 62-64% with Associate Professors and Instructors/Lecturers and 70% with Assistant Professors.

Table 4 provides breakdowns of first-year retention rates by faculty type and student residency status. First-year students in the overall cohort who were non-residents had higher retention rates than students who were residents. However, when looking at retention rates by faculty type, students who are residents have higher retention rates than non-residents when taking credit hours taught by non-tenure track instructional faculty. Similarly, when looking at faculty rank, resident students taking credit hours with Assistant Professors have higher retention rates than non-residents. Both residents and non-residents took the highest number of credit hours with non-tenure track instructional faculty and the least amount with early retired faculty.

Table 4

First-Year Retention Rates by Faculty Type and Student Residency Status

	Resident			Non-Resident		
	Total N	Retained N	Retained %	Total N	Retained N	Retained %
Tenured/Ten Track	1,650	1,303	79.0%	177	146	82.5%
Non-Tenure Track	1,696	1,317	79.9%	189	151	77.7%
Part-Time Term	861	696	80.8%	85	71	83.5%
Visiting Faculty	893	717	80.3%	102	84	82.4%
Early Retired	49	42	85.7%	7	7	100.0%
Graduate Assistants	1,525	1,211	79.4%	166	132	79.5%
Other Instructors	1,144	897	78.4%	134	109	81.3%
Full-Time Faculty	1,785	1,382	77.4%	198	155	78.3%
Part-Time Faculty	1,734	1,359	78.4%	185	147	79.5%
Full Professor Rank	735	602	81.9%	84	70	83.3%
Associate Professor	1,476	1,172	79.4%	158	133	84.2%
Assistant Professor	1,644	1,283	81.1%	175	142	78.0%
Instructor/Lecturer	1,529	1,204	78.7%	169	139	82.2%

Next, the data analysis examined students who reported being first-generation students in comparison to those first-year students who had one or both parents who attended a college or university. Table 5 provides breakdowns of first-year retention

rates by faculty type and first-generation status. Results were similar to the overall cohort with first-generation students having lower retention rates with every type of faculty in comparison to students who were not first-generation. In contrast to other results, first-generation students had the highest retention rates when taking credit hours with visiting faculty. First-generation students took the highest number of credit hours with non-tenure track instructional faculty, while very few took credit hours with early retired faculty.

Table 5

First-Year Retention Rates by Faculty Type and First-Generation Status

	First-Generation Student			Not First-Generation		
	Total N	Retained N	Retained %	Total N	Retained N	Retained %
Tenured/Ten Track	505	378	74.9%	1,206	979	81.2%
Non-Tenure Track	524	383	73.1%	1,238	990	80.0%
Part-Time Term	258	193	74.8%	616	513	83.3%
Visiting Faculty	264	203	76.9%	658	541	82.2%
Early Retired	12	9	75.0%	40	37	92.5%
Graduate Assistants	458	343	74.9%	1,118	911	81.5%
Other Instructors	356	265	74.4%	838	676	80.7%
Full-Time Faculty	550	400	72.7%	1,301	1,037	79.7%
Part-Time Faculty	529	391	73.9%	1,261	1,015	80.5%
Full Professor Rank	232	176	75.9%	537	453	84.4%
Associate Professor	452	340	75.2%	1,076	882	82.0%
Assistant Professor	502	369	73.5%	1,201	965	80.3%
Instructor/Lecturer	457	341	74.6%	1,130	913	80.8%

Table 6 provides breakdowns of first-year retention rates by faculty type and first-year cumulative college GPA. Results of the analysis are consistent with the overall cohort where students in the lowest GPA group had the lowest retention rates regardless

of the type of faculty with whom they took their credit hours and students in the highest GPA group had the highest first-year retention rates. First-year students in all three cumulative GPA groups took the highest number of credit hours with non-tenure track faculty while also having the lowest retention rates than with any other type of faculty. Assistant Professors taught the greatest number of credit hours to first-year students, but students had the lowest retention rates.

Table 6

First-Yr Retention Rate by Faculty Type and 1st-Year Cum University GPA

	Below 2.0			2.00 – 2.99			3.0 and Above		
	Tot N	Ret N	Ret %	Tot N	Ret N	Ret %	Tot N	Ret N	Ret %
Tenured/Ten Trk	189	69	36.5%	640	510	79.7%	984	870	88.4%
Non-Ten Track	198	66	33.3%	673	533	79.2%	990	866	87.5%
Part-Time Term	99	33	33.3%	330	274	83.0%	512	460	89.8%
Visiting Faculty	95	36	37.9%	397	319	80.4%	494	444	89.9%
Early Retired	3	1	33.3%	16	14	87.5%	36	34	94.4%
Graduate Asst	167	63	37.7%	604	482	79.8%	905	797	88.1%
Other Instructor	136	48	35.3%	469	377	80.4%	662	581	87.8%
Full-Time Fac	214	73	34.1%	701	554	79.0%	1,042	907	87.0%
Part-Time Fac	198	71	35.9%	679	543	80.0%	1,021	891	87.3%
Full Professor	94	40	42.6%	289	239	82.7%	433	393	90.8%
Associate Prof	170	61	35.9%	567	457	80.6%	884	787	89.0%
Assistant Prof	184	62	33.7%	667	525	78.7%	954	838	87.8%
Instructor/Lect	162	56	34.6%	605	484	80.0%	910	800	87.9%

Differences among First-Year Retention and Percentage Exposure to Faculty Type

The second research question guiding this study addressed whether or not there were differences among first-year retention rates and the proportion of coursework that

students take from different types of faculty. Two statistical analyses were conducted with the institutional data set and the results are presented in Table 7. First, descriptive statistics were run using each of the percentage of credit hours taught by faculty type variables in order to obtain the mean values and standard deviations. Second, point-biserial correlation analyses were run to test the strength of the association of the dichotomous retention rate variable as the dependent variable to each of the independent variables. The strength of the relationship between retention rate and each faculty variable is measured on a scale from 0 to 1 with 1 indicating a perfect correlation. The correlation result can be either positive or negative to show if the association between the two variables increases or decreases as the scale variable representing the percentage of credit hours taught by faculty type changes.

Results of the analyses show that non-tenure track faculty teach the greatest percentage of credit hours taken by first-year students (31.47%). When looking at full-time/part-time status, the percentage of credit hours taken by first-year students is 65% with full-time faculty compared to 35% with part-time faculty. First-year students take the greatest percentage of credit hours with faculty ranked as Assistant Professors (26.43%). Examination of the point-biserial correlation results show that there are some significant relationships between first-year student retention rates and type of faculty. There is a statistically ($p < .05$) significant positive relationship between the percentage of credit hours taught by tenured/tenure-track faculty and first year student retention. In contrast, there is a statistically ($p < .05$) significant negative relationship between retention rate and the percentage of courses taught by other instructors. In regards to

faculty rank, the results show there is a statistically ($p < .05$) significant positive relationship between the percentage of courses taught by Full Professors and student retention.

Table 7

Measures and Correlations for Percentage of Credit Hrs Taught by Faculty

	Mean	SD	Correlation	Sig.
Tenured/Ten Track	27.19	17.70	.045*	.043
Non-Tenure Track	31.47	18.38	-.042	0.63
Part-Time Term	6.53	8.63	-.022	.327
Visiting Faculty	7.55	8.96	-.008	.738
Early Retired	0.29	1.78	.020	.372
Graduate Assistants	19.98	14.69	.034	.125
Other Instructors	6.97	7.57	-.050*	.025
Full-Time Faculty	65.16	16.86	-.041	.068
Part-Time Faculty	33.11	16.54	.041	.065
Full Professor Rank	5.47	7.89	.057*	.011
Associate Professor	16.56	12.75	.018	.418
Assistant Professor	26.43	16.66	-.041	.066
Instructor/Lecturer	17.41	12.89	.002	.914

*Correlation is significant at the 0.05 level (2 tailed).

Table 8 provides a summary of the first-year student retention rates broken down by type of faculty and the proportion of credit hours taught. First-year students who did not have any credit hours taught by tenured/tenure-track faculty members had the lowest retention rates in comparison to students who did not take credit hours with the other types of faculty. Early retired faculty taught the least percentage of credit hours with no students taking more than 25 percent of their courses with that type of faculty, but those students also had the highest retention rates compared to the other types of faculty teaching that amount of credit hours. First-year students taking 26 to 50 percent of their credit hours with other instructors had the lowest retention rates in comparison to the other faculty types while tenured/tenure-track faculty had the highest retention rates in that group. Only tenured/tenure-track and non-tenure track faculty had more than 75 percent of credit hours taken by first-year students with tenured/tenure-track faculty showing significantly higher retention rates.

In regards to full-time/part-time status, all first-year students had at least one course taught by a full-time faculty member. Retention rates for that group were highest for students who took between 25 to 50 percent of their credit hours with full-time faculty. First-year students who took 25 percent or fewer of their credit hours with part-time faculty had significantly higher retention rates than students taking that same amount of credit hours with full-time faculty. In contrast, retention rates for first-year students taking over 75 percent of their credit hours with part-time faculty had significantly lower retention rates than the equivalent percentage of credit hours taught by full-time faculty. In examining the results in relation to faculty rank, the analyses show

that first-year students take half or less of their credit hours with faculty who are Full Professors. Assistant Professor is the only faculty rank who taught more than three fourths of the credit hours to first-year students. Overall, first-year students taking any percentage of credit hours with Full Professors had the highest retention rates. Assistant Professors teaching the lowest percentage of credit hours resulted in the highest student retention rates and the rates went down consistently as the percentage of credit hours taught went up.

Table 8

First-Yr Retention Rate by Faculty Type and Percent of Credit Hrs Taught

	No Credits	25% or Less	26% - 50%	51 – 75%	Over 75 %
Tenured/Ten Trck	56.1%	79.5%	79.6%	77.5%	75.0%
Non-Tenure Track	69.7%	78.7%	79.1%	73.9%	60.0%
Part-Time Term	74.2%	82.4%	63.1%	---	---
Visiting Faculty	74.4%	81.9%	64.6%	---	---
Early Retired	77.2%	87.5%	---	---	---
Graduate Assist	66.2%	79.4%	81.3%	61.9%	---
Other Instructors	75.2%	79.8%	50.0%	---	---
Full-Time Faculty	---	57.1%	81.6%	77.6%	75.3%
Part-Time Faculty	47.7%	76.3%	79.9%	79.9%	46.7%
Full Professor	74.2%	81.4%	91.8%	---	---
Associate Prof	66.3%	79.9%	81.0%	62.1%	---
Assistant Prof	67.9%	80.2%	78.4%	68.9%	62.5%
Instructor/Lecturer	67.8%	79.6%	79.3%	52.9%	---

Differences among Academic Colleges and First-Year Retention

The final research question addressed by this study asked if there were differences among academic colleges in regards to faculty composition and first-year retention rates. The data set used in this study consisted of all full-time, first-year students whose major field of study is housed within the academic colleges of social and natural sciences,

education, and health sciences. Table 9 provides a breakdown of the first-time, full-time students enrolling during the Fall 2014 semester in the three academic colleges examined in this study. The college with social and natural sciences majors had the largest incoming first-year class with 990 students, while the college with education majors had the lowest with 349 first-year students. All three colleges had more female students than male students, however, the college of natural and social sciences had a much lower percentage of female students compared to male students than the other two colleges.

First-year students in all three academic college were predominantly White and residents of the state in which the institution is located. First-generation students made up a little under one third of the incoming class in all three colleges. The college of social and natural sciences had more first-year students with a cumulative college GPA below 2.0 while the college of education had the highest percentage of students with a cumulative college GPA of 3.0 or above. First-year students enrolled in majors in the college of education had the highest first-to-second year retention rate (82.8%) while students enrolled in majors in the college of natural and social sciences had the lowest retention rate (74.4%). First-year students enrolled in majors in the college of health sciences had an overall retention rate of 79.2%. The corresponding retention rates for the three colleges align with the mean University Cumulative GPA, with the college of education having the highest first-to-second year retention rate (82.8%) and the college of natural and social sciences with the lowest retention rate (71.5%).

Table 9

Descriptive Statistics for First-Year Cohorts by Academic College of Major

	Social/Natural Sci		Education		Health Sciences	
	N	%	N	%	N	%
Total Cohort	990		346	82.8%	645	79.2%
Female	596	60.2%	280	80.2%	509	78.9%
Male	394	39.8%	69	19.8%	136	21.1%
White	808	81.6%	311	89.1%	556	86.2%
African-American	67	6.8%	9	2.6%	40	6.2%
Asian	9	0.9%	3	0.9%	2	0.3%
Hispanic	38	3.8%	10	2.9%	17	2.6%
Two or More Races	48	4.8%	14	4.0%	22	3.4%
International	15	1.5%	1	0.3%	1	0.2%
Unknown/Other	5	0.5%	1	0.3%	7	1.1%
First Generation	288	31.1%	89	27.2%	173	28.9%
Resident	869	87.8%	325	93.1%	592	91.8%
Non-Resident	121	12.2%	24	6.9%	53	8.2%
Univ Cum GPA Below 2.0	137	14.1%	20	5.8%	58	9.1%
Univ Cum GPA 2.0-2.99	372	38.2%	87	25.1%	242	37.9%
Univ Cum GPA 3.0 & Up	465	47.7%	239	69.1%	338	53.0%

Table 10 examines the differences among the three academic colleges in regards to the type of faculty each college assigns to credit hours taken by first-year students as well as the comparative first-to-second year retention rates. First-year students in the college of social and natural sciences took the most credit hours from non-tenure track instructional faculty, but those students took almost an equal number of credit hours from tenured/tenure-track faculty. In comparison, first-year students enrolled in the college of education took the highest percentage of credit hours with tenured/tenure-track faculty while students in health sciences took the highest percentage of their credit hours with non-tenure track instructional faculty. Student retention rates vary across academic college and faculty type, however, the college of education had higher retention rates than the other two colleges regardless of type of faculty. In all three colleges, retention rates were highest for early retired faculty although that faculty group also taught the fewest number of credit hours. Students taking credit hours with non-tenure track instructional faculty had the lowest retention rates across all three academic colleges.

Overall faculty status did not seem to be a factor in comparing retention rates by faculty type for the three academic colleges. Full-time and part-time faculty in the colleges of education and health sciences taught an equal percentage of credit hours to first-year students and had very similar retention rates for students within each college. First-year students in the college of social and natural sciences took a slightly higher percentage of credit hours with full-time faculty compared to part-time faculty, but retention rates for part-time faculty were lower than those for students who took courses with full-time faculty.

Table 10

First-Year Retention Rates by Academic College and Type of Faculty

	Social/Nat Sci			Education			Health Sci		
	Tot N	Reten N	Reten %	Tot N	Reten N	Reten %	Tot N	Reten N	Reten %
Tenure/Ten Trk	911	696	76.4%	337	282	83.7%	579	471	81.3%
Non-Tenure Trk	912	684	75.0%	334	279	83.5%	639	505	79.0%
Part-Time Term	468	362	77.4%	187	160	85.6%	291	245	84.2%
Visiting Faculty	513	395	77.0%	198	171	86.4%	284	235	82.7%
Early Retired	27	23	85.2%	9	8	88.9%	20	18	90.0%
Graduate Assist	812	622	76.6%	330	281	85.2%	549	440	80.1%
Other Instructor	558	419	75.1%	243	207	85.2%	477	380	79.7%
Full-Time Fac	989	737	74.5%	349	289	82.8%	645	511	79.2%
Part-Time Fac	932	707	75.9%	348	289	83.0%	639	510	79.8%
Full Professor	445	359	80.7%	142	125	88.0%	232	188	81.0%
Associate Prof	822	632	76.9%	312	265	84.9%	500	408	81.6%
Assistant Prof	898	682	75.9%	323	268	83.0%	598	475	79.4%
Instructor/Lect	805	612	76.0%	303	258	85.1%	590	473	80.2%

When looking at differences among the colleges in regards to faculty rank, some patterns can be seen in the results. For all three academic colleges, Full Professors taught a significantly lower percentage of credit hours to first-year students than the other

faculty ranks. First-year students taking credit hours with Full Professors had the highest retention rates in the college of social and natural sciences and education, but not the college of health sciences. Student retention rates in the college of health sciences was highest for students who took credit hours with faculty holding the rank of Associate Professor.

Comparative data among the three academic colleges was calculated for each student on the percentage of credit hours taken by type of faculty, such as tenured/tenure-track, non-tenure track instructional faculty, and term appointment faculty, as well as full-time/part-time status and faculty rank. Table 11 provides a breakdown of these credit hour percentages for each of the three academic colleges. First-year students enrolled in the college of social and natural sciences had the highest percentage of credit hours taken with tenured/tenure-track faculty (32.5%) while students enrolled in the college of health sciences had the lowest percentage of credit hours taken with tenured/tenure-track faculty (19.2%). The college of health sciences had the highest percentage of students taking credit hours with non-tenure track instructional faculty (41.6%) while students enrolled in the college of education had the highest percentage of credit hours taken with other types of instructors such as administrative employees (24.5%).

In regards to full-time/part-time status, the data shows that the college of social and natural sciences had a higher percentage of first-year students taking credit hours from full-time faculty (68.7%) while students enrolled in the college of education took a higher percentage of their credit hours from part-time faculty (38.9%). However, all three colleges examined in the study had a higher percentage of full-time faculty

members teaching first-year students than part-time faculty. Results by faculty rank show that of the total credit hours taught, students in the colleges of social and natural sciences and education took the highest percentage with Associate Professors while students in health sciences took the highest percentage with faculty members who had a rank of Assistant Professor.

Table 11

Percentages of Credits Taken by Academic College and Faculty Type

Percent Credits of Total	Social/Natural Sci	Education	Health Sciences
Tenured/Ten Track	32.5%	28.2%	19.2%
Non-Tenure Track	26.8%	25.9%	41.6%
Part-Time Term	6.7%	7.1%	5.8%
Visiting Faculty	8.1%	7.4%	7.0%
Early Retired	0.3%	0.3%	0.3%
Graduate Assistants	19.7%	6.8%	18.2%
Other Instructors	6.0%	24.5%	8.0%
Full-Time Faculty	68.7%	61.1%	65.0%
Part-Time Faculty	31.3%	38.9%	35.0%
Full Professor Rank	8.5%	4.2%	1.8%
Associate Professor	21.8%	25.3%	14.9%
Assistant Professor	17.2%	15.8%	22.1%
Instructor/Lecturer	12.3%	6.7%	10.3%

After comparing retention rates and percentage of credit hours taught by type of faculty for the three academic colleges, the next step in the data analysis process was to run point-biserial correlations to determine any differences in the relationship between first-year student retention rates and variables related to faculty type, full-time/part-time status, and faculty rank. The study used significance as the criteria for establishing relationships between the variables, however that is not the only approach that could have been used. Table 12 provides the output for these analyses.

In regards to faculty type, the results show that there is a statistically significant but weak positive relationship between first-year retention and courses taught by tenured/tenure track faculty for both the colleges of social and natural sciences ($p < .05$) and health sciences ($p < .05$). Within the college of health sciences, data results also show a statistically ($p < .05$) significant negative relationship between retention rate and credit hours taught by non-tenure track instructional faculty and a statistically ($p < .05$) significant positive relationship with graduate assistants who taught first-year students. Results of the analysis also show a statistically ($p < .05$) significant negative relationship between credit hours taught by other instructors and first-year retention rate for students in the college social and natural sciences. Although these relationships were statistically significant, they were also weak relationships. There were no statistically significant relationships for students in the college of education for any of the faculty types.

Table 12

Correlation Results for First-Year Retention Rates and Faculty Measures

	Social/Natural Sci Correlation	Education Correlation	Health Sciences Correlation
Tenured/Ten Track	.066*	-.011	.103*
Non-Tenure Track	.023	-.032	-.178*
Part-Time Term	-.056	-.039	.052
Visiting Faculty	-.031	-.011	.044
Early Retired	.007	.029	.045
Graduate Assistants	-.015	.046	.113*
Other Instructors	-.096*	.041	-.038
Full-Time Faculty	.034	-.037	-.143*
Part-Time Faculty	-.014	.025	.118*
Full Professor Rank	.103*	.076	-.025
Associate Professor	.013	-.020	.088*
Assistant Professor	.020	-.073	-.106*
Instructor/Lecturer	.008	.005	-.030

*Correlation is significant at the 0.05 level (2 tailed).

In regards to full-time/part-time status of faculty teaching first-year students, the college of health sciences was the only academic college to produce statistically significant results. There was a statistically ($p < .05$) significant negative relationship with courses taught by full-time faculty and a statistically ($p < .05$) positive relationship

with courses taught by part-time faculty. Differences among the academic colleges were also evident when looking at faculty rank. First-year student retention rates for the college of social and natural sciences showed a statistically ($p < .05$) significant positive relationship with Full Professors. In the college of health sciences, a statistically ($p < .05$) significant negative relationship was shown between first-year retention and faculty with an Assistant Professor rank and a statistically ($p < .05$) significant positive relationship with Associate Professors. The college of education did not demonstrate any significant relationships between first-year retention rates and faculty rank.

The final step in the data analysis process was to run separate linear regression analyses for each academic college to determine the ability to predict first-year student retention rates based on all of the faculty type variables together, for each college. In an attempt to deal with the unavoidable multicollinearity of variables related to faculty type, separate regression analyses were run while removing one independent variable each time to deal with the suspected high correlation among the predictors. No differences were found among the models, therefore multicollinearity can be ruled out as having impact on the overall final regression model. The regression model used with the three academic colleges consisted of the dependent variable (0, 1), fall retention, and all of the independent variables (percentage of credit hours taken with tenured/tenure track, non-tenure track instructional, part-time term, early retired, visiting faculty, graduate assistants, other instructors, full-time faculty, full professors, associate professors, assistant professors, and instructor/lecturers) entered stepwise, excluding percentage of

credit hours taken with part-time faculty since that was the only completely redundant variable (inversely redundant with part-time faculty).

Tables 13 and 14 provide the results of the multiple regression analysis for the college of social and natural sciences. The regression analysis determined that two faculty variables, percentage of credit hours taken with full professors and percentage of credit hours taken with other instructors, were the only significant predictors of first-year student retention, however the variation explained by these two predictors was very small (1.6%).

Table 13

Regression Results – Social and Natural Sciences Majors

Variable	R	Adjusted R^2	R^2 Change	SE
Pct Credits Taken w/ Full Prof Rank	.103	.010	.011	.434
Pct Credits Taken w/ Other Instructor	.135	.016	.008	.433

Table 14 provides additional regression results, showing that the effect of faculty type on retention was significant, $F(2, 987) = 9.112$, $p < .05$.

Table 14

Summary of Regression Model – Social and Natural Sciences Majors

Variable	B	SE	F
Pct Credits Taken w/ Full Prof Rank	.005	.002	10.579
Pct Credits Taken w/ Other Instructor	-.005	.002	9.112
Constant	.747	.021	---

Tables 15 and 16 provide the results of the regression analysis for the college of education. The results of the regression analysis indicated the two predictors, percentage of credit hours taken with Full Professors and percentage of credit hours taken with other instructors only explained 0.2% of the variance.

Table 15

Regression Results – Education Majors

Variable	R	Adjusted R^2	R^2 Change	SE
Pct Credits Taken w/ Full Prof Rank	.076	.003	.006	.377
Pct Credits Taken w/ Other Instructor	.088	.002	.008	.377

Table 16 provides the additional regression results, showing that the effect of faculty type on retention was significant, $F(2, 346) = 1.342$, $p < .05$.

Table 16

Summary of Regression Model – Education Majors

Variable	B	SE	F
Pct Credits Taken w/ Full Prof Rank	.004	.003	2.026
Pct Credits Taken w/ Other Instructor	.002	.003	1.342
Constant	.791	.032	---

Tables 17 and 18 provide the results of the regression analysis for the college of health sciences. The results of the regression analysis indicated the two predictors, percentage of credit hours taken with non-tenure track instructional faculty and percentage of credit hours taken with other instructors only explained 3.7% of the variance.

Table 17

Regression Results – Health Sciences Majors

Variable	R	Adjusted R^2	R^2 Change	SE
Pct Credits Taken Non-Ten Trck Fac	.178	.030	.032	.400
Pct Credits Taken w/ Other Instructor	.200	.037	.008	.398

Table 18 provides the additional regression results, showing that the effect of faculty type on retention was significant, $F(2, 642) = 13.326$, $p < .05$.

Table 18

Summary of Regression Model – Health Sciences Majors

Variable	B	SE	F
Pct Credits Taken Non-Ten Trck Fac	-.004	.001	21.101
Pct Credits Taken w/ Other Instructor	-.005	.002	13.326
Constant	1.011	.046	---

Results of the statistical analyses used in the study demonstrate there are some differences among first-year student retention rates in relation to the type of faculty with whom they take their credit hours. Differences emerge based on various student characteristics and type of faculty, however faculty type cannot be used as a significant predictor of student retention.

Chapter Five: Findings and Recommendations

The primary interest of this study was to examine the relationship between first-year student retention and the types of faculty with whom they take their courses at a four-year public institution of higher education. The study included the population of 1,984 first-year students enrolled in the Fall 2014 at a four-year, public research university. Based on the theoretical framework of Tinto's (1975) interactionalist theory of student departure, this study sought to address research questions focusing on the relationship between first-year student retention and type of faculty teaching, percentage of credit hours by faculty type, and differences among academic colleges.

The design of the study included the utilization of an institutional dataset to examine first-year retention rates and various student and faculty related variables. This research used several data analyses including means procedures, cross-tabulations, point-biserial correlation analyses, and linear regression to explore the impact of type of faculty on first-year student retention. Results of this data analysis demonstrated that relationships do exist between retention rates and the type of faculty with whom first-year students take their courses and that those relationships vary depending on student characteristics and faculty type.

Relationship between First-Year Retention and Faculty Type.

The first research question addressed by this study asked: Is there a relationship between first-year retention at a four-year public research university and the type of faculty with whom students take their courses? The findings of this research provided mixed results that support the hypothesis that retention rates do have a relationship with

the type of faculty teaching first-year students. Results of the study showed that student retention rates by various student demographic variables are consistent with prior research done in this area. The retention rates for female students were higher than retention rates for male students which correspond to results of other studies (Leppel, 2002; Mortenson, 2001; Wohlgemuth, Whalen, Sullivan, Nading, Shelley, & Wang, 2007). Retention rates by race/ethnicity for first-year students in this study differ from prior research that indicated retention rates for minority students tend to be lower than non-minority students (Arbora & Nora, 2007; Blankenship, 2010; Keller & Rollins, 1990). First-year retention rates for African-American and Asian students in this study were higher than White students. Hispanic students had lower retention rates than all other categories except for international students. Hispanic students also demonstrated lower retention rates in previous studies (Arbora & Nora, 2007; Astin, Tsui, & Avalos, 1996) showing a consistency from this study to other research.

Retention rates for non-resident students in this study were higher than those for residents which is in contrast to prior research in this area (Herzog, 2005; Whalen, Saunders, & Shelley, 2010; Wohlgemuth et al., 2007). Results of the study showed that students who reported themselves as first-generation were lower than those for students whose parents had some higher education experience which is consistent with previous studies (Choy, 2001; Ishitani, 2006; Riehl, 1994). Academic performance during the first year of college can also be a strong indicator of student retention and results of this study were consistent with prior research where students with lower college GPA had lower retention rates (Friedman & Mandel, 2009; Herzog, 2005).

When examining the first-year retention rates for students in this study in relation to the type of faculty with whom they take their courses, results are somewhat inconsistent with prior research as well. Students had the highest retention rates when taking courses with early retired faculty which may demonstrate the impact that these more experienced faculty may have in their classrooms. However, the percentage of students taking credit hours with early retired faculty were significantly lower than with other types of faculty, making it more difficult to determine if this type of faculty had a significant impact on student retention. Previous studies indicated that part-time faculty would have a negative impact on first-year students for various reasons such as less experience (Umbach, 2007), lack of resources or support (Kezar, 20130, and poor working hours and pay (Jacobs, 2004). However, results of this study determined that first-year students taught by part-time faculty had slightly higher retention rates than those taught by full-time faculty. These results are in contrast to several prior studies which demonstrated that first-year retention rates were lower for part-time instructors (Bettinger & Long, 2006; Harrington & Schibik, 2004; Jaeger & Hinz, 2008). The differences in the current results compared to prior research may have to do with the academic colleges examined in this study. Other academic colleges at the institution that enroll students in fields of study such as engineering, business, and communication with enhanced selection criteria may use larger numbers of full-time faculty to teach first-year students than the colleges examined in this study. Previous studies have highlighted the long hours that full-time faculty work which may be a factor in their classroom teaching in contrast to part-time faculty (Jacobs, 2004). Finally, students in the study showed

increased retention rates when taught by faculty members holding Full Professor rank compared to lower ranked faculty. These results may speak to the positive effect that these senior faculty members have on teaching first-year students, with their greater experience in the classroom, in relation to faculty at lower ranks who have less experience in the classroom.

Results of this study add to prior research in this area by combining student variables such as gender, residency status, and race/ethnicity with type of faculty. Further analyses that looked more closely at differences in retention rates and student characteristics compared to type of faculty produced mixed results. Retention rates for female students were consistently higher than those for male students regardless of the type of faculty with whom they took their courses. Since prior studies have also found higher retention rates for females (Leppel, 2002; Mortenson, 2001; Wohlgemuth, Whalen, Sullivan, Nading, Shelley, & Wang, 2007), these results may indicate that student gender may be a better indicator of first-year retention than type of faculty.

Differences in retention rates by faculty type were apparent though when examining student residency status. In the overall cohort, non-resident students had higher retention rates. However, when breaking those results down by faculty type, the data showed that resident students had higher retention rates when taking courses taught by non-tenure track instructional faculty and when taking courses taught by faculty with Assistant Professor rank. Non-tenure track faculty do not have the same workload expectations for research and service that tenured/tenure-track faculty have which may allow them to focus more on the teaching that happens in the classroom. Retention rates

for first-generation students when broken down by type of faculty remained consistent with the overall cohort regardless of the type of faculty with whom they took their courses. These results are in keeping with previous studies on first-generation students that showed a decreased likelihood of persisting to the second year (Choy, 2001; Collier & Morgan, 2008; Ishitani, 2003; Ishitani, 2006: Riehl, 2004).

Overall, comparison of student characteristic variables to faculty type variables in relation to first-year student retention rates showed that the student characteristic variables were stronger factors in determining retention. Retention rates for each of the student characteristic variables held true to retention rates for the overall cohort even when faculty type variables were introduced. There were only a few instances where the introduction of a faculty type variable caused a change in retention rates for a given student characteristic variable. These results reflect the limitations that exist in this analysis of the data where duplicated student records showed a repeated effect by each faculty type. This limitation created the need for additional, controlled analysis at the unduplicated student record level to examine the effect of faculty type on first-year retention based on the amount of exposure to each type of faculty.

Proportionality of Credit Hours by Faculty Type and Student Retention

Research question two focused on the differences among first to second year retention rates based on the proportionality of students' coursework that students take from the different types of faculty. From the results, the results are mixed in this area as well. Some first-year students examined in this study who took a higher percentage of their courses with tenured/tenure-track faculty had lower retention rates than students

who took a lower percentage of their courses with tenured/tenure-track faculty. However, first-year students who had no courses with tenured/tenure-track faculty in comparison to the other faculty types had the lowest retention rates. These results would indicate that some exposure to more experienced faculty during their first year has a positive influence on student retention. Other first-year students took higher percentages of their coursework with non-tenure track faculty, but their retention rates were in the medium range compared to students who took significantly less credit hours with non-tenure track faculty. Previous studies have also shown that non-tenure track faculty and other part-time faculty in general teach greater percentages of courses taken by first-year students (Benjamin, 2002; Harrington & Schibik, 2004).

When examining results related to full-time/part-time status, students who took over 75 percent of their courses with part-time faculty had significantly lower retention rates (47%) than students who had fewer credit hours with part-time faculty (76% to 79%). These findings are consistent with previous studies that found increased exposure to part-time faculty led to lower first-year retention rates (Jaegar & Eagan, 2011). These results suggest that some exposure to full-time faculty has a positive influence on student retention. Similar results can be seen when looking at retention rates by faculty rank. First-year students with a higher percentage of their credit hours taken with Associate Professors, Assistant Professors or Instructors/Lecturers saw reduced rates of retention than those with a lower percentage of credit hours. These results also point to the benefit of having first-year students taught by higher ranked faculty members during their first year in college. Prior studies have shown that as the quality of faculty instruction

increases, so does student achievement (Carrell & West, 2010). This research supports the finding that lower ranked faculty who are newer to the profession or who have competing workload concerns related to earning tenure or advancing in the ranks may not demonstrate the higher quality of teaching that contributes to student achievement and retention that higher ranked faculty have.

In summary, findings suggest that the proportion of coursework taken with a given type of faculty may result in reduced retention rates. First-year students who are exposed to too much or too little instruction from one particular type of faculty do not receive the benefits of a variety of teaching methods and experiences crucial for their academic success and their desire to remain enrolled at their institution. However, this analysis is limited because it does not control for differences based on academic major. The types of courses that first-year students take their first year can vary because of the field of study in which they are enrolled, therefore, additional analysis was needed to account for differences in academic major.

Differences among Academic Colleges with First-Year Retention and Faculty Type

The third research question centered on the differences among academic colleges in regards to the composition of their faculty and the subsequent retention rates of their first-year students. Results of the study indicate that differences do exist among the academic colleges examined in regards to their use of different types of faculty and the retention rates of first-year students enrolled, however, the results are inconsistent across the three academic colleges. The college of social and natural sciences used the highest percentage of tenured/tenure-track faculty in teaching first-year students, but had the

lowest retention rates of the three academic colleges included in the study. First-year students enrolled in the college of health sciences were predominantly instructed by non-tenure track faculty and retention rates for those students were in between those of students enrolled in the other two academic colleges. The composition of the faculty teaching the majority of credit hours taken by first-year students in the college of education were fairly evenly distributed among tenured/tenure-track faculty, non-tenure track faculty and other instructors, such as administrative employees, and held the highest first-year retention rates of the three academic colleges.

Previous studies have shown that part-time faculty were most often used in academic areas such as nursing and education (Johnson, 2006) which is slightly different than in the results of this study. First-year students enrolled in health sciences and education majors in this study were taught equally by full-time and part-time faculty. Retention rates for students in these areas were fairly equal regardless of the full-time/part-time status of the instructors with whom they took courses. These mixed results seem to indicate that there are differences among the various academic disciplines in the types of faculty that are being assigned to teach first-year students and the subsequent impact on first-year retention. Some colleges relied more heavily on tenured/tenure track faculty to teach first-year courses such as the social and natural sciences, but their retention rates were lower than non-tenure track or part-time faculty. In contrast, colleges enrolling health sciences majors relied more heavily on non-tenure track instructional faculty and had better overall retention rates.

Implications for Future Research and Practice

Results of this study show that additional research in the area of first-year student retention and type of faculty instruction may be necessary. Although relationships between retention rates and faculty were determined and differences among faculty types were shown, the results did not provide a satisfactory amount of actionable information. Further research in this area should go further in examining relationships between first-year retention rates and type of faculty by focusing more on added levels of faculty variables such as combining employment status and faculty type to determine if differences exist in regards to combinations such as full-time non-tenure track instructional faculty versus part-time non-tenure track instructional faculty.

The data analysis for this study focused on information at the student level, while further research in this area would do well to examine data more closely at the course-level to see if differences at that level may impact student retention. Further analysis could look at the relationship between retention rates and courses that are part of the student's field of study versus general education courses. Students taking courses outside of their area of interest may not participate as fully or have as much knowledge in the subject as they would with courses in the field of study they wish to pursue. In addition, future research in this area could examine whether certain discipline-related coursework has an impact on first-year retention. Prior studies have indicated that an area of concern with part-time faculty is the likelihood that part-time faculty may grade students more easily than full-time faculty in order to receive better teacher evaluations to ensure continued employment (Hoffmann & Oreopoulos, 2000). Additional analysis on course

grades by faculty type in relation to student retention is also recommended to determine if concerns regarding grade inflation may be a factor.

Future studies in this area may do well to pursue additional means of structuring the data set and formulating the calculated variables. The way that the percentage of credit hours taken by the various faculty type variables was comprised could have been done differently or else the duplicated student records could have been maintained to provide a different look into retention rates at the course level. Limiting students in this study to the three academic colleges that did not have a common stricter entrance criteria may have also contributed to the results since the students were very similar in academic preparedness and other college readiness measures. Additional research in this area is recommended to see what impacts academic college and selection criteria may have on student retention.

This study added to the research by examining differences in retention rates for student demographics in combination with faculty type variables. Future research in this area could go into even more detail in examining the combination of these sets of variables in relation to first-year retention. Both the current study and prior research showed that first-generation students are at increased risk for leaving before their second year (Choy, 2001; Collier & Morgan, 2008; Ishitani, 2003; Ishitani, 2006: Riehl, 2004). Future research would do well to examine potential reasons first-generation students continue to struggle regardless of the type of instruction they receive. With first-generation students comprising nearly one third of the students in this study, additional analysis with this student group is recommended to determine ways to improve their

retention rates in order to achieve academic success in college. In other areas, results of the current study in regards to student demographics, such as residency status and race/ethnicity, were in contrast to previous studies. Additional research is recommended to explain these differences such as the influence of academic college or by including additional variables such as socioeconomic status, financial aid benefits, work status, course load, and student involvement in regards to faculty teaching these first-year students. Other variables that could be explored along with the current variables include course grade received by faculty type, changes in academic major during the first year, or type of instruction used in the classroom.

The current study was limited to examining information on a single four-year public institution of higher education, making the results more difficult to generalize to other public institutions more broadly as well as for other types of higher education institutions. Further research in this area that could expand beyond a single institution may provide a more robust data set to work with in regards to the relationship between first-year student retention and type of faculty teaching their courses. Other types of higher education institutions such as community colleges or private institutions may use different compositions of faculty types and expanding this research to other types of institutions would add to the research knowledge in this area. Since the current study was conducted at a four-year public research university, determining the role that institution type played in regards to student retention rates, student characteristics, and type of faculty employed is difficult.

The findings of this study could have implications for institutional leaders who are trying to meet state and federal college completion agendas where the number of students who receive degrees is becoming more and more important. Increased focus on improving first-year student retention would help institutional leaders meet the goal of enhancing student success and degree attainment. In addition, these results could inform academic departmental leaders who are trying to make decisions regarding faculty composition, resource allocations, and curricular choices. The results of this study may be used to determine which type of faculty may be beneficial to students based on the student demographics within their academic college. Academic leaders may want to ensure that their first-year students are receiving at least some instruction from more experienced or senior ranked faculty in order to provide an increased chance for higher student retention rates.

Summary

This study provides a variety of statistical information related to first-year student retention rates and the type of faculty with whom they take their courses. The results of this study show how complex the relationships are between students of different demographic and academic backgrounds and the various types of faculty that are employed by institutions of higher education. The experiences that students have in the classroom during their first-year may have an impact on their decision to remain at the institution for their second year. Increased awareness regarding these first-year academic experiences among academic leaders may lead to improved employment and curricular decisions. Optimizing first-year retention becomes imperative as institutions of higher

education strive to improve the success of their students, the efficiency of their academic resources as well as their institution as a whole.

References

Anderson, E. L. (2002). *The new professoriate: Characteristics, contributions and compensation*. Washington, DC: American Council on Education Center for Policy Analysis.

Arbona, C., & Nora, A. (2007). The influence of academic and environmental factors on Hispanic college degree attainment. *The Review of Higher Education, 30*(3), 247-269.

Astin, A. W. (1975). *Preventing students from dropping out*. San Francisco, CA: Jossey-Bass.

Astin, A. W., & Oseguera, L. (2005). Pre-college and institutional influences on degree attainment. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 245-276). Westport, CT: Praeger.

Astin, A. W., Tsui, L., & Avalos, J. (1996). *Degree attainment rates at American colleges and universities: Effects of race, gender, and institutional types*. (Report No. HE 029589). Los Angeles, CA: Higher Education Research Institute (ERIC No. ED400749).

Auguste, B. G., Cota, A., Jayaram, K., & Laboissiere, M. C. A. (2010). Winning by degrees: The strategies of highly productive higher-education institutions. Retrieved from http://mckinseyonsociety.com/winning-by-degrees/

Bai, H., & Pan, W. (2009). A multilevel approach to assessing the interaction effects on college student retention. *Journal of College Student Retention, 11*(2), 287-301.

Baldwin, R. G., & Wawrzynski, M. R. (2011). Contingent faculty as teachers: What we know; what we need to know. *American Behavioral Scientist, 55*(11), 1485-1509.

Bean, J. P. (1990). Why students leave: Insights from research. In D. Hossler & J.P. Bean (Eds.), *The strategic management of college enrollments* (pp. 147-169). San Francisco, CA: Jossey-Bass.

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

Beeson, S. A., & Kissling, G. (2001). Predicting success for baccalaureate graduates on the NCLEX-RN. *Journal of Professional Nursing, 17*(3), 121-127.

Benjamin, E. (2002). How over-reliance on contingent appointments diminishes faculty involvement in student learning. *Peer Review, 5*(1), 4-10. ISSN: 1541-1389.

Berger, J. B., & Lyon, S. C. (2005). Past to present: A historical look at retention. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 1-29). Westport, CT: Praeger.

Bettinger, E. P., & Long, B. T. (2006). The increasing use of adjunct instructors at public institutions: Are we hurting students? In R. Ehrenberg (Ed.), *What's happening to public higher education?* (pp. 51-69). Westport, CT: Greenwood Press.

Bettinger, E. P., & Long, B. T. (2010). Does cheaper mean better? The impact of using adjunct instructors on student outcomes. *The Review of Economics and Statistics, 92*(3), 598-613. ISSN: 0034-6535.

Bill & Melinda Gates Foundation (2014). Strategy overview. In *What we do: Postsecondary success.* Retrieved from http://www.gatesfoundation.org/What-We-Do/US-Program/Postsecondary-Success

Bland, C. J., Center, B. A., Finstad, D. A., Risbey, K. R., & Staples, J. (2006). The impact of appointment type on the productivity and commitment of full-time faculty in research and doctoral institutions. *The Journal of Higher Education, 77*(1), 89-123. ISSN: 0022-1546.

Blankenship, M. (2010). How some schools increase graduation rates of minority students. *Education Digest, 76*(4), 26-29.

Boden, D., & Borrego, M. (2011). Academic departments and related organizational barriers to interdisciplinary research. *Higher Education in Review, 8*, 41-64.

Bolge, R. D. (1995). *Examination of student learning as a function of instructor status (full-time versus part-time) at Mercer County Community College*. U.S. Department of Education, Office of Educational Research and Improvement. Washington, DC: U.S. Government Printing Office.

Boyer, P. G., Butner, B. K., & Smith, D. (2007). A portrait of remedial instruction: Faculty workload and assessment techniques. *Higher Education, 54*(4), 605-613. doi:10.1007/s10734-006-9030-8

Bradford, C., & Farris, E. (1991). *Survey on retention at higher education institutions: Higher education surveys report*. Rockville, MD: Westat, Inc.

Braunstein, A., McGrath, M., & Pescatrice, D. (2000). Measuring the impact of financial factors on college persistence. *Journal of College Student Retention, 2*(3), 191-203.

Braxton, J. M. (2008). Toward a scholarship of practice centered on college student retention. *New Directions for Teaching and Learning, 115*, 101-112. doi:10.1002/tl.328

Braxton, J. M., Jones, W. A., Hirschy, A. S., & Hartley, H. V., III, (2008). The role of active learning in college student persistence. *New Directions for Teaching and Learning, 115*, 71-83. doi:10.1002/tl.326

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

Brown, L. L., & Robinson Kurpius, S. E. (1997). Psychosocial factors influencing academic persistence of American Indian college students. *Journal of College Student Development, 38*(1), 3-12.

Burgess, L. A., & Samuels, C. (1999). Impact of full-time versus part-time instructor status on college student retention and academic performance in sequential courses. *Community College Journal of Research and Practice, 23*(5), 487-498. doi:10.1080/106689299264684

Carell, S. E., & West, J. E. (2010). Does professor quality matter? Evidence from random assignment of students to professors. *Journal of Political Economy, 118*(3), 409-432.

Choy, S. (2001). *Students whose parents did not go to college: Postsecondary access, persistence, and attainment*. (NCES 2001-126), U.S. Department of Education, National Center for Education Statistics, Washington, DC.

Collier, P., & Morgan, D. (2008). Is that paper really due today? Differences in first generation and traditional college students' understandings of faculty expectations. *Higher Education, 55*(4), 425-446.

Complete College America (2014). Retrieved from http://completecollege.org/

Conley, V. M., Leslie, D. W., & Zimbler, L. J. (2002). *Part-time instructional faculty and staff: Who they are, what they do, and what they think. 1993 National Study of Postsecondary Faculty (NSOPF:93)* (NCES 2002-163). U.S. Department of Education, Office of Educational Research and Improvement. Washington, DC: U.S. Government Printing Office.

Copeland, K. J., & Levesque-Bristol, C. (2011). The retention dilemma: Effectively reaching the first-year university student. *Journal of College Student Retention, 12*(4), 485-515.

Cragg, K. M. (2009). Influencing the probability of graduation at four-year institutions: A multi-model analysis. *Research in Higher Education, 50*(4), 394-413. doi: 10.1007/s11162-009-9122-2

Daempfle, P. A. (2003). An analysis of the high attrition rates among first year college science, math, and engineering majors. *Journal of College Student Retention, 5*(1), 37-52.

Davidson, C., & Wilson, K. (2013). Reassessing Tinto's concepts of social and academic integration in student retention. *Journal of College Student Retention, 15*(3), 329-346.

Devarics, C. (2009). Obama agenda focuses on degree completion. *Diverse Issues in Higher Education Review 26*(5), 6-7. ISSN: 1557-5411.

Eagan, M. K., & Jaeger, A. J. (2008). Closing the gate: Part-time faculty instruction in gatekeeper courses and first-year persistence. *New Directions for Teaching and Learning, 115*, 39-53. doi:10.1002/tl.324

Eagan, M. K., Jaeger, A. J., & Grantham, A. (2015). Supporting the academic majority: Policies and practices related to part-time faculty's job satisfaction. *The Journal of Higher Education, 86*(3), 448-480.

Ebersole, J. (2010). Degree completion: Responding to a national priority. *Continuing Higher Education Review, 74*, 23-31.

Ehrenberg, R. G., & Zhang, L. (2005). Do tenured and tenure-track faculty matter? *The Journal of Human Resources, 40*(3), 647-659. ISSN: 0022-166X.

Einarson, M. K., & Clarkberg, M. E. (2010). Race differences in the impact of students' out-of-class interactions with faculty. *The Journal of the Professoriate, 3*(2), 101-136. ISSN: 1556-7699.

Field, J., & Morgan-Klein, N. (2013). Reappraising the importance of class in higher education entry and persistence. *Studies in the Education of Adults, 45*(2), 162-176.

Figlio, D. N., Schapiro, M. O., & Soter, K. B. (2013). Are tenure track professors better teachers? *The Review of Economics and Statistics, 97*(4), 715-724. doi:10.3386/w19406

Finnegan, C., Morris, L. V., & Lee, K. (2008). Differences by course discipline on student behavior, persistence, and achievement in online courses of undergraduate general education. *Journal of College Student Retention, 10*(1), 39-54. doi:10.2190/CS.10.1.d

Fogel, J. L., & Yaffe, J. (1992). *Ethnic minority and Caucasian student experiences at the university of Utah and recommendations for institutional response*. Paper presented at the Annual Forum of the Association for Institutional Research, Atlanta, GA.

Friedman, B. A., & Mandel, R. G. (2009). The prediction of college student academic performance and retention: Application of expectancy and goal setting theories. *Journal of College Student Development, 11*(2), 227-246. doi:10.2190/CS.11.2.d

Galicki, S. J., & McEwen, M. K. (1989). The relationship of residence to retention of black and white university students. *Journal of College Student Development, 30*(5), 389-394.

Gansemer-Topf, A. M., Kollasch, A., & Sun, J. (2015). A house divided? Examining persistence for on-campus STEM and non-STEM students. *Journal of College Student Retention, 0*(0), 1-25. doi:10.1177/1521025115611671

Gappa, J. M., & Leslie, D. W. (1993). *The invisible faculty: Improving the status of part-timers in higher education*. San Francisco, CA: Jossey-Bass Publishers.

Goodman, K., & Pascarella, E. T. (2006). First-year seminars increase persistence and retention: A summary of the evidence from How College Affects Students. *Peer Review, 8*(3), 26-28.

Grosset, J. M. (1991). Patterns of integration, commitment, and student characteristics and retention among younger and older students. *Research in Higher Education, 32*(2), 159-178.

Harrington, C., & Schibik, T. (2004). Caveat emptor: Is there a relationship between part-time faculty utilization and student learning outcomes and retention? *AIR Professional File, 91*, 1-6.

Herzog, S. (2005). Measuring determinants of student return vs. dropout/stopout vs. transfer: A first-to-second year analysis of new freshmen. *Research in Higher Education, 46*(8), 883-928.

Hinz, D. (2005). *The effects of part-time faculty on first semester freshmen retention: A predictive model using logistic regression* (Unpublished master's thesis). North Carolina State University, Raleigh, NC.

Hoffman, F., & Oreopoulos, P. (2009). Professor qualities and student achievement. *The Review of Economics and Statistics, 91*(1), 83-92. ISSN: 0034-6535.

Hong, B. S. S., Shull, P. J., & Haefner, L. A. (2011). Impact of perceptions of faculty on student outcomes of self-efficacy, locus of control, persistence, and commitment. *Journal of College Student Retention, 13*(3), 289-309.

House, J. D. (2000). Relationships between self-beliefs, academic background, and achievement of undergraduate students in health science majors. *International Journal of Instructional Media, 27*(4), 447-460.

Hu, S., & St. John, E. P. (2001). Student persistence in a public higher education system: Understanding racial and ethnic differences. *Journal of Higher Education, 72*(3), 265-285.

Humphreys, D. (2012). What's wrong with the completion agenda -- And what can we do about it. *Liberal Education, 98*(1), 8-17. ISSN: 0024-1822.

Hurley, D. J., Harnisch, T. L., & Parker, E. A. (2014). Top 10 higher education state policy issues for 2014. *Policy Matters*, 1-5.

Iffert, R. E. (1958). *Retention and withdrawal of college students*. Washington, DC: United States Department of Education.

Inman, W. E., & Mayes, L. D. (1999). The importance of being first: Unique characteristics of first-generation community college students. *Community College Review, 26*(4), 3-22.

Ishitani, T. T. (2003). A longitudinal approach to assessing attrition behavior among first-generation college students: Time-varying effects of pre-college characteristics. *Research in Higher Education, 44*(4), 433-469.

Ishitani, T. T. (2006). Studying attrition and degree completion behavior among first-generation college students in the United States. *The Journal of Higher Education, 77*(5), 861-885.

Jaasma, M., & Koper, R. (1999). The relationship of student-faculty out-of-class communication to instructor immediacy and trust and to student motivation. *Communication Education, 48*(1), 41-47.

Jacobs, J. A. (2004). The faculty time divide. *Sociological Forum, 19*(1), 3-27.

Jacoby, D. (2006). Effects of part-time faculty employment on community college graduation rates. *The Journal of Higher Education, 77*(6), 1081-1103. ISSN: 1538-4640.

Jaeger, A. J., & Eagan, M. K. (2011). Examining retention and contingent faculty use in a state system of public higher education. *Educational Policy, 25*(3), 507-537. doi:10.1177/0895904810361723

Jaeger, A. J., & Hinz, D. (2008). The effects of part-time faculty on first semester freshmen retention: A predictive model using logistic regression. *Journal of College Student Retention, 10*(3), 265-286. doi: 10.2190/CS.10.3.b

Johnson, I. Y. (2006, May). *Examining part-time faculty utilization and its impact on student retention at a public research university*. Paper presented at the Annual Forum of the Association for Institutional Research, Chicago, IL.

Johnson, J. (2000). Learning communities and special efforts in the retention of university students: What works, what doesn't, and is the return worth the investment? *Journal of College Student Retention, 2*(3), 219-238.

Jones, R. A. (2011). Outcome funding: Tennessee experiments with a performance-based approach to college appropriations. *National Crosstalk 19*(1), 1-8.

Kehrberg, N., & Turpin, W. K. (2002, March). *Impact of part-time faculty on freshman performance, satisfaction and retention*. Paper presented at the meeting of the North Carolina Association for Institutional Research, Greensboro, NC.

Kelderman, E. (2012). Completion is new key to cash for Tennessee colleges. *The Chronicle of Higher Education 59*(6). ISSN: 0009-5982.

Keller, M. J., & Rollins, C. J. (1990). Nonreturning freshmen at Maryland public campuses: Why they left and what they thought of their college experience. *Studies in Higher Education and Research, 1*, 1-11.

Kezar, A. (2013). Examining non-tenure track faculty perceptions of how departmental policies and practices shape their performance and ability to create student learning at four-year institutions. *Research in Higher Education, 54*(5), 571-598. doi:10.1007/s11162-013-9288-5

Kezar, A., & Sam, C. (2011). Understanding non-tenure track faculty: New assumptions and theories for conceptualizing behavior. *American Behavioral Scientist, 55*(11), 1419-1442. doi:10.1177/0002764211408879

Kim, M. M., Rhoades, G., & Woodard, D. (2003). Sponsored research versus graduating students? Intervening variables and unanticipated findings in public research universities. *Research in Higher Education, 44*(1), 51-82.

Kim, Y. K., & Sax, L. J. (2014). The effects of student-faculty interaction on academic self-concept: Does academic major matter? *Research in Higher Education, 55*(8), 780-809. doi:10.1007/s11162-014-9335-x

Komarraju, M., Musulkin, S., & Bhattacharaya, G. (2010). Role of student-faculty interactions in developing college students' academic self-concept, motivation and achievement. *Journal of College Student Development, 51*(3), 332-342.

Kuh, G. D., Kinzie, J. A., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2007). Piecing together the student success puzzle. *ASHE Higher Education Report, 32*(5), 1-182.

Kurotsuchi-Inkelas, K., Daver, Z. E., Vogt, K. E., & Brown Leonard, J. (2007). Living-learning programs and first-generation college students' academic and social transition to college. *Research in Higher Education, 48*(4), 403-434.

Landrum, R. E. (2009). Are there instructional differences between full-time and part-time faculty? *College Teaching, 57*(1), 23-26. ISSN: 8756-7555.

Leppel, K. (2002). Similarities and differences in the college persistence of men and women. *Review of Higher Education, 25*(4), 433-450.

Lewallen, W. (1993). The impact of being "undecided" on college-student persistence. *Journal of College Student Development, 34*, 103-112.

Lillis, M. P. (2011). Faculty emotional intelligence and student-faculty interactions: Implications for student retention. *Journal of College Student Retention, 13*(2), 155-178. doi:10.2190/CS.13.2.b

Lundquist, C., Spalding, R. J., & Landrum, R. E. (2002). College student's thoughts about leaving the university: The impact of faculty attitudes and behaviors. *Journal of College Student Retention, 4*(2), 123-133.

Magolda, M. B. (1990). The impact of the freshman year on epistemological development: Gender differences. *Review of Higher Education, 13*, 259-284.

Marsh, G. (2014). Institutional characteristics and student retention in public 4-year colleges and universities. *Journal of College Student Retention, 16*(1), 127-151.

Martin, M., Myers, S., & Mottet, T. (1999). Students' motives for communicating with their instructors. *Communication Education, 48*(2), 155-164.

Mortenson, T. G. (2001). Where the guys are not: The growing gender imbalance in college degrees awarded. *Postsecondary Education Opportunity, 104*, 1-11.

Myers, S. A. (2004). The relationship between perceived instructor credibility and college student in-class and out-of-class communication. *Communication Reports, 17*(2), 129-137.

National Center for Education Statistics. (2013). *Digest of Education Statistics, 2012* (NCES Publication No. 2014015). U.S. Department of Education.

Nelson Laird, T. F., Chen, D., & Kuh, G. D. (2008). Classroom practices at institutions with higher-than-expected persistence rates: What student engagement data tells us. *New Directions for Teaching and Learning, 115*, 85-99. doi:10.1002/tl.327

Nora, A., Barlow, E., & Crisp, G. (2005). Student persistence and degree attainment beyond the first year in college: The need for research. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 129-154). Westport, CT: Praeger.

Nutting, M. M. (2003). Part-time faculty: Why should we care? *New Directions for Higher Education,* (123), 33-39. ISSN: 0271-0560.

Obama, B. H. (2009). Remarks of President Barack Obama – As prepared for delivery address to joint session of Congress. Retrieved from http://www.whitehouse.gov/the_press_office/Remarks-of-President-Barack-Obama-Address-to-Joint-Session-of-Congress

O'Keefe, P. (2013). A sense of belonging: Improving student retention. *College Student Journal, 47*(4), 605-613.

Pascarella, E. T., Seifert, T. A., & Whitt, E. J. (2008). Effective instruction and college student persistence: Some new evidence. *New Directions for Teaching and Learning, 115*, 55-70. doi:10.1002/tl.325

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research*, (2nd ed.), San Francisco, CA: Jossey-Bass.

Pike, G. R., Hansen, M. J., & Childress, J. E. (2014). The influence of students' pre-college characteristics, high school experiences, college expectations, and initial enrollment characteristics on degree attainment. *Journal of College Student Retention, 16*(1), 1-23.

Pittman, C. T. (2010). Race and gender oppression in the classroom: The experiences of women faculty of color with white male students. *Teaching Sociology, 38*(3), 183-196.

Polinsky, T. L. (2003). Understanding student retention through a look at student goals, intentions, and behavior. *Journal of College Student Retention, 4*(4), 361-376.

Porter, S. R., & Swing, R. L. (2006). Understanding how first-year seminars affect persistence. *Research in Higher Education, 47*(1), 89-109. doi:10.1007/s1162-005-8153-6

Purdie, J. R., III, & Rosser, V. J. (2011). Examining the academic performance and retention of first-year students in living-learning communities and first-year experience courses. *College Student Affairs Journal, 29*(2), 95-112. ISSN: 0888-210X.

Reichard, G. W. (2003). The choices before us: An administrator's perspective on faculty staffing and student learning in general education courses. *New Directions for Higher Education*, (123), 61-69.

Riehl, R. J. (1994). The academic preparation, aspirations, and first-year performance of first-generation students. *College and University, 70(1)*, 14-19. ISSN: 0010-0889.

Robst, J., Keil, J., & Russo, D. (1998). The effect of gender composition of faculty on student retention. *Economics of Education Review, 17*(4), 429-439.

Ronco, S., & Cahill, J. (2006). Does it matter who's in the classroom? Effect of instructor type on student retention, achievement and satisfaction. *AIR Professional File, 100*, 1-16.

Ryan, J. F. (2004). The relationship between institutional expenditures and degree attainment at baccalaureate colleges. *Research in Higher Education, 45*(2), 97-114.

Salomonson, K. (2005). Predictive modeling on a lean budget. In C. Westman (Ed.) *AACRAO's Basic Guide to Enrollment Management* (pp. 23-31). Washington, D.C.: American Association of Collegiate Registrars and Admissions Officers.

Samuels, W., Beach, A. L., & Bierlein Palmer, L. (2011). Persistence of adult undergraduates on a traditionally-oriented university campus: Does Donaldson and Graham's model of college outcomes for adult students still apply? *Journal of College Student Retention, 13*(3), 351-371.

Schnell, C. A., & Doetkott, C. D. (2003). First year seminars produce long-term impact. *Journal of College Student Retention, 4*(4), 377-391.

Schuster, J. H. (2003). The faculty makeover: What does it mean for students? *New Directions for Higher Education,* (123), 15-22. ISSN: 0271-0560.

Schuster, J. H., & Finkelstein, M. J. (2006). *The American faculty: The restructuring of academic work and careers*. Baltimore, MD: The Johns Hopkins University Press.

Seidman, A. (2005). Where we go from here. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 295-316). Westport, CT: Praeger.

Seymour, E., & Hewitt, N. (1997). *Talking about leaving: Why undergraduates leave the sciences*. Boulder, CO: Westview Press.

Shelton, B. A., & Skaggs, S. (1996). How faculty members spend their time: A closer look. *Academe, 82*(5), 16-20.

Shults, C. (2000). *Remedial education: Practices and policies in community colleges*. (Research Brief.) Washington, D.C.: American Association of Community Colleges.

Smart, J. C., Feldman, K. A., & Ethington, C. A. (2000). *Academic disciplines: Holland's theory and the study of college students and faculty*, Nashville, TN: Vanderbilt University Press.

Soria, K. M., Stebleton, M. J., & Huesman, R. L., Jr. (2013). Class counts: Exploring differences in academic and social integration between working-class and middle/upper-class students at large, public research universities. *Journal of College Student Retention, 15*(2), 215-242.

Stevens, J. (1986). *Applied multivariate statistics for the social sciences*, Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Stevenson, J. M., Buchanan, D. A., & Sharpe, A. (2006). Commentary: The pivotal role of the faculty in propelling student persistence and progress toward degree completion. *Journal of College Student Retention, 8*(2), 141-148.

Stonebraker, R. J., & Stone, G. S. (2015). Too old to teach? The effect of age on college and university professors. *Research in Higher Education, 56*(8), 793-812.

Strage, A. (1999). Social and academic integration and college success: Similarities and differences as a function of ethnicity and family background. *College Student Journal, 33*(2), 198-205.

Strenta, C., Elliott, R., Russell, A., Matier, M., & Scott, J. (1994). Choosing and leaving science in highly selective institutions. *Research in Higher Education, 35*(5), 513-547.

Tandberg, D. A., & Hillman, N. W. (2014). State higher education performance funding: Data, outcomes, and policy implications. *Journal of Education Finance, 39*(3), 222-243.

Terenzini, P. T., & Pascarella, E. T. (1979). Student-faculty informal contact and college persistence: A further investigation. *Journal of Education Research, 72*, 214-218.

Thompson, K. (2003). Contingent faculty and student learning: Welcome to the strativersity. *New Directions for Higher Education*, (123), 41-47.

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

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.

Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. Journal of Higher Education, 68(6), 599-623.

Tinto, V. (2005). Moving from theory to action. In A. Seidman (Ed.), *College student retention: Formula for student success* (pp. 317-333). Westport, CT: Praeger.

Tinto, V. (2006). Research and practice of student retention: What next? *Journal of College Student Retention: Research, Theory & Practice, 8*(1), 1-19.

Umbach, P. D. (2007). How effective are they? Exploring the impact of contingent faculty on undergraduate education. *Review of Higher Education, 30*(2), 91-123. ISSN: 0162-5748.

Walters, G. (2012). It's not so easy: The completion agenda and the states. *Liberal Education, 98*(1), 34-39. ISSN: 0024-1822.

Whalen, D., Saunders, K., & Shelley, M. (2010). Leveraging what we know to enhance short-term and long-term retention of university students. *Journal of College Student Retention, 11*(3), 407-430. doi:10.2190/CS.11.3.f

Wild, L., & Ebbers, L. (2002). Rethinking student retention in community colleges. *Community College Journal of Research and Practice, 26*(6), 503-519.

Williford, A. M., Cross Chapman, L., & Kahrig, T. (2001). The university experience course: A longitudinal study of student performance, retention, and graduation. *Journal of College Student Retention, 2*(4), 327-340.

Wolf-Wendel, L., Ward, K., & Kinzie, J. (2009). A tangled web of terms: The overlap and unique contribution of involvement, engagement, and integration to understanding college student success. *Journal of College Student Development, 50*(4), 407-428.

Wohlgemuth, D., Whalen, D., Sullivan, J., Nading, C., Shelley, M., & Wang, Y. (2007). Financial, academic, and environmental influences on the retention and graduation of students. *Journal of College Student Retention, 8*(4), 457-475.

Wright Sidle, M., & McReynolds, J. (2009). The freshman year experience:s Student retention and student success. *NASPA Journal, 46*(3), 434-446.

York-Anderson, D. C., & Bowman, S. L. (1991). Assessing the college knowledge of first-generation and second-generation college students. *Journal of College Student Development, 32*(2), 116-122.

Zhao, C., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education, 45*(2), 115-138.

Zimmerman, L. W., McQueen, L., & Guy, G. (2007). Connections, interconnections, and disconnections: The impact of race, class and gender in the university classroom. *The Journal of Theory Construction & Testing, 11*(1), 16-21.

Appendix A: Institutional Review Board Approval Letter

Project Number	16-E-180
Project Status	APPROVED
Committee:	Office of Research Compliance
Compliance Contact:	Shelly Rex (rexs@ohio.edu)
Primary Investigator:	Elizabeth Bennett
Project Title:	Study of the Relationship between First-Year Student Retention and Faculty Type
Level of Review:	EXEMPT

The Ohio University Office of Research Compliance reviewed and approved by exempt review the above referenced research. The Office of Research Compliance was able to provide exempt approval under 45 CFR 46.101(b) because the research meets the applicability criteria and one or more categories of research eligible for exempt review, as indicated below.

IRB Approval:	04/28/2016 11:05:08 AM
Review Category:	4

Waivers: Category 4 (no consent)

If applicable, informed consent (and HIPAA research authorization) must be obtained from subjects or their legally authorized representatives and documented prior to research involvement. In addition, FERPA, PPRA, and other authorizations must be obtained, if needed. The IRB-approved consent form and process must be used. Any changes in the research (e.g., recruitment procedures, advertisements, enrollment numbers, etc.) or informed consent process must be approved by the IRB before they are implemented (except where necessary to eliminate apparent immediate hazards to subjects).

It is the responsibility of all investigators and research staff to promptly report to the Office of Research Compliance / IRB any serious, unexpected and related adverse and potential unanticipated problems involving risks to subjects or others.

This approval is issued under the Ohio University OHRP Federalwide Assurance #00000095. Please feel free to contact the Office of Research Compliance staff contact listed above with any questions or concerns.

Research Compliance
117 Research and Technology Center 740.593.0664
compliance@ohio.edu

Thesis and Dissertation Services