2020

The Impact Of First-Year Seminars And Learning Communities On First- To Second-Year Retention In Higher Education

Joseph D. Thomas
Indiana State University

THE IMPACT OF FIRST-YEAR SEMINARS AND LEARNING COMMUNITIES ON FIRST- TO SECOND-YEAR RETENTION IN HIGHER EDUCATION

A Dissertation

Presented to

The College of Graduate and Professional Studies

Department of Teaching and Learning

Indiana State University

Terre Haute, Indiana

In Partial Fulfillment

of the Requirements for the Degree

Doctorate of Philosophy

---

by

Joseph D. Thomas

July 2020

Keywords: first-year experience (FYE), retention, first-year seminars (FYS), learning communities (LCs)

COMMITTEE MEMBERS

Committee Chair: Susan Powers, Ed.D.

Associate Vice President, Academic Affairs

Indiana State University

Committee Member: Linda S. Maule, Ph.D.

Dean, University College and Associate Professor

Indiana State University

Committee Member: Melissa H. Nail, Ph.D.

Professor of Teaching and Learning

Indiana State University

ABSTRACT

In the United States, traditionally aged first-year students enrolled in post-secondary education are highly at risk of not persisting through their first year and, therefore, on to graduation (Barefoot, 2004; Tinto, 1993). Several interventions across the United States exist to improve retention rates of these students, including First-Year Experience programs (FYE; National Resource Center, 2017). The purpose of this study was to determine if enrollment in a first-year seminar (FYS) or learning community (LC) helped to predict student success controlling for demographic and academic characteristics. Archived data, including five cohorts of students, were obtained from a mid-sized, Midwestern, public, four-year institution. A quantitative methodology was used that included multiple linear regression to predict second semester cumulative GPA. The resulting model showed enrollment statistical significance overall controlling for multiple demographic and academic variables ($F[17, 10937] = 360.2$, $p < .05$, $R^2 = .359$); however the variables including enrollment in the FYE curriculum were not statistically significant contributors. These findings aligned with previous research conducted demonstrating mixed results among the success of FYE. Some themes arose, including a stronger predictive ability for students with a higher high school GPA and financial need. Limitations of the study, implications for practice, and suggestions for future research are presented as well.

ACKNOWLEDGEMENTS

I am grateful to so many for supporting and helping me along this journey. I am especially appreciative of my dissertation committee. Special thanks to Dr. Susan Powers who guided me from the start. She checked in often and always encouraged me to "keep going." I am thankful for her guidance and consistency in telling me I could do this. Thank you to Dr. Linda Maule who inspired me personally and professionally. I pursued this degree because of her leadership, encouragement, and zeal for first year student success. An additional thank you to Dr. Melissa Nail, whose careful feedback and suggestions made a great impact in guiding my study.

An additional thank you to those in Institutional Research who asked valuable questions in the beginning to ensure my study would be sound and what data may be most helpful. I am grateful to several faculty mentors who took their valuable time to help edit, refine, and scale in my wordiness. I will forever be grateful for their dedication to my success as well.

Personally, I would like to thank my dear friend Kelli who encouraged me every day, listened to my challenges and concerns, and reminded me it would all pay off. A special thank you to my family who checked in regularly and reminded me why I was working on a doctoral degree. They never stopped telling me they were proud of what I was doing, even when my progress slowed at times. Finally, a heartfelt appreciation goes to my partner who has been with me since day one of this adventure. He never hesitated to provide encouragement or to give me the space I needed to do the work. He never faltered in his equal dedication to my success nor doubted my ability to finish even when I did myself. Thank you, Beau.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

The value of a degree, public mistrust, increased competition within recruitment, changing funding models, and retention and degree completion are continuous and mounting concerns in higher education in the United States of America (The Trends Report 2020). One of the common threads through all those concerns is retaining and graduating students (Barefoot, 2000). These concerns instigated this quantitative study on interventions developed to retain students from their first year in higher education to their second.

Tinto (1993), in the opening of his book on student attrition, commented on a harsh reality, “More students leave their college or university prior to degree completion than stay” (p. 1). Even though this was published in 1993, the statement holds true decades later given more recent research that shows higher education continues to struggle with first year retention (Connolly et al., 2013). State and federal regulations and policies in the United States have shifted to monitoring and incentivizing institutions to provide more support for students to complete their degrees while keeping the time enrolled and financial burden to a minimum. While institutional personnel have focused on retention issues, the current trend of decreasing government funding, especially for public universities, has introduced challenges to student degree completion.

Numerous factors influence a prospective student's decision to enroll at a particular institution. Perceived prestige of the college or university is one of the leading factors in a student's choice (Mayhew et al., 2016). Not surprisingly, the more prestige an institution has, the more selective it becomes. Universities can earn prestige through notable programs and alumni but also through successful students and degree attainment (Porter & Swing, 2006). Several studies showed a higher likelihood of degree attainment for those attending more selective institutions (Mayhew et al., 2016).

Retention and degree attainment statistics are important indicators of health for an institution of higher education on many different levels (Carlson, 2020). Additionally, fiscal health is a strong indicator of retention. Strong retention rates are a good predictor of better predictability in the funding expected from government sources (Astin & Oseguera, 2005; Barefoot, 2004; Mayhew et al., 2016; Porter & Swing, 2006). Mayhew et al. (2016) found institutions with strong retention rates demonstrate multiple successes, including a robust support system for students, a higher level of rigor within the admissions process, and an efficient, effective, and early process in identifying students at risk of dropping out. Institutions with higher retention rates identify at-risk students early enough either not to admit them or to ensure they can provide them with the needed support to succeed. Astin and Oseguera (2005) found that most variation among degree completion rates at institutions was attributed to differences among the incoming cohorts of students rather than their retention programs' successes. The researchers claimed that demographic characteristics of students, as well as the levels of academic preparedness, need to be considered to compare differences in completion and retention rates accurately.

The six-year graduation rate for students who started at public universities in 2011 was reported as 60% as compared to private institutions at 66% (U.S. Department of Education, 2019). The overall six-year graduation rate increased in the last decade from 57.7% (Astin & Oseguera, 2005). Throughout the 2000s, institutions that were more selective during the admissions process obtained higher six-year graduation rates (Mayhew et al., 2016). The United States set a national goal of having the world's highest college completion rate by the year 2020, which the Advisory Committee on Student Financial Assistance (2012) reported not to be achievable as early as their 2012 report.

Institutions with higher retention rates tend to be more selective and prestigious with higher social and academic engagement (Barefoot, 2004; Mayhew et al., 2016). Institutions with a "more favorable" (Mayhew et al., 2016, p. 368) student-to-faculty ratio also increased the likelihood of degree attainment, whereas institutional size was not found to have any significant impact. Webber (2012), in an analysis on institutional spending, found that for an additional $100 spent on instruction per full-time equivalency (FTE) student, the likelihood of the student graduating rose by 3.9%. Increased funding in other areas, such as student services, produced mixed results.

The focus on research in retention took hold in the late 20th century, and it identified several factors for why students left. These factors included staying enrolled in higher education but transferring to a different institution, temporarily leaving or stopping out, voluntarily dropping out, or maintaining a sense of general academic unpreparedness (Barefoot, 2004; Horton, 2015; Tinto, 1975; Xu, 2017). However, these statistics on attrition neglect the entire story. Institutional personnel did not typically track or take into consideration the student's individual goals, which may not involve degree completion at all, or at the least at the initial

institution (Barefoot, 2004). Additionally, most research focused directly on the student as the primary cause for attrition while neglecting the institution's role in the process. More recently, further research has been conducted on student experiences at the institution, examining the likelihood for success through the lens of student engagement, or "the intersection of student behaviors and institution conditions" (Xu, 2017, p. 50). Still, less is known overall about the institution's role in student persistence (Barefoot, 2004).

Background and Overview of Barriers to First-Year Retention

Attrition levels are highest in the first year of higher education (Barefoot, 2004). The transition to higher education is a drastic change, and is especially so for traditional-aged first-year students who matriculate directly from secondary education. These new students leave behind a group of people and a set of norms that were established over years and transition abruptly to a new environment, a new group of people, and new norms (Tinto, 1988). This environment also allows for greater independence and freedom than they have experienced before with increased responsibility and little intrusive guidance or support, all of which culminates in a great deal of stress during the transition. This new environment also provides a plethora of new terminology, a complex system of processes and regulations, and oftentimes a decentralized approach in conducting business or solving problems. Because these challenges occur during the first year, first-year students were identified as the most at risk of not continuing or persisting through their education after the first semester or first year and were the group with the highest percentage of drop outs (Barefoot, 2004; Horton, 2015; Huff & Burek, 2016; Tinto, 1999).

Tinto (1999) argued institutions were not taking retention seriously, and students were still experiencing segmented learning in which they could not create linkages between what they

were learning, why, and how to take advantage of the peers and faculty members around them. This segmentation then created an environment in which students became disengaged and had an increased likelihood of dropping out of college entirely or transferring to a different institution they felt may help them connect better. Tinto (1999) posited four areas in which institutions could help alleviate some of the risk of attrition by first-year students, including "information/advice, support, involvement, and learning" (p. 5). These four areas were identified through research conducted in the late 20th century and helped to clarify the most common reasons students left, as well as their primary barriers to success. Because of this research, a shift in higher education has occurred and continues to grow regarding increased interventions for first-year students developed to aid in their transition to college and potential for success, especially over the last 20 years.

Common Barriers to Success

Several attributes have been found to indicate whether a student is at risk of dropping out or more likely to leave the institution. These attributes provide institutions with student characteristics to monitor and identify early in hopes of mitigating those risk factors and improving the students' likelihood of persisting. These attributes and circumstances have been categorized into several domains over the years. These domains were broken into factors associated with individual people, their family, the school environment, and their surrounding community (Hammond et al., 2007; Horton, 2015; Tinto, 1975). Horton's (2015) research further explored attributes of at-risk students including their academic perseverance, their educational mindset, the strategies they use to learn, and their social abilities. Students considered to be at risk were defined by *The Glossary of Education Reform* as "students or groups of students who are considered to have a higher probability of failing academically or dropping out of school"

("At-Risk Definition," 2013, para. 1). Other definitions included language around being ill-equipped to perform in post-secondary education; language inclusive of background, internal, and environmental factors; and language inclusive of traditional and non-traditional learners (Horton, 2015). Further, institutions oftentimes narrowed this definition based on the demographic of their students and their levels of academic preparation, including GPA and standardized test scores. For instance, Connolly et al. (2013) defined being at risk within their institution specifically as an entering first-year undergraduate student with a high school GPA of 2.8 out of 4.0 or lower and a composite SAT score of 800 or less.

Although numerous risk factors have been found to impact first-year student retention, research tends to focus on first-year students' academic preparation for college-level learning (Barefoot, 2004; Horton, 2015). Despite this focus, Barefoot (2004) found that the majority of students who dropped out in their first year listed reasons for their decision to drop out unrelated to their academic preparation(Barefoot, 2004). Socioeconomic status, first-generation status, and family participation were all reasons listed by students, especially by those who were part of an under-represented population (Barefoot, 2004; Horton, 2015).

Other factors impeding a student's likelihood for success or degree completion were external to the student's locus of control. Specifically, state-instituted policies that included different funding models and more expansive articulation agreements between states were found to impact educational attainment (Mayhew et al., 2016). Mayhew et al. (2016) wrote, "Considering the variation that occurs within institutions (and types of institutions) is critical to understanding the factors that may affect retention, persistence, and graduation" (p. 378). When planning interventions to increase the retention of students, all the following should be

considered: institutional type, funding, size, and location; race, gender, and other demographic characteristics of students; and local policies and resources.

Common Indicators for Success

Not surprisingly, Pascarella and Terenzini (2005) found academic achievement, in terms of good grades, in college to be the "strongest within-college predictor of educational attainment" (p. 379). If students were doing well in their classes, they were likely to be retained. Pascarella and Terenzini found this correlation to be strongest within the first year of higher education, but they noted that other studies showed similar results regardless of class standing. Overall, both average and high-achieving students were much more likely to persist than low-achieving students. The persistence of these students was partially explained by academic dismissal policies; however, students with low grades who then began to earn higher grades increased their probability of staying enrolled. "Therefore, the efficacy of remediation in preparing students to continue and succeed in college-level course work is critically important" (Mayhew et al., 2016, p. 381).

An embedded and well-connected first-year experience (FYE) that includes a curriculum which focuses on pedagogy over content and addresses the common barriers faced by first-year students provides an environment in which it is easier for students to connect and engage (Tinto, 1999). FYE programs provide an opportunity for institutions to connect both the curricular and co-curricular, increase meaningful interactions between faculty, students, and staff, and improve time-on-task and students' engagement in overall learning (Astin, 1993; National Resource Center, 2013; Tinto, 1999).

First-Year Experience

Because research demonstrates that college students are most likely to drop out in their first year, FYE programs, departments, and curricula have been developed to support students as they face common barriers during the transition to post-secondary education (Tinto, 1993, 1999). Several theoretical frameworks, curricular, and co-curricular program models exist for professionals, faculty, and staff to use in assisting students in a successful transition into higher education. These models are typically designed to impact and address directly the common barriers as described previously, especially for students considered to be at risk. Because of the multiple variables playing a role in retention among students and institutions, studies disagree about which areas, programs, functions, or particular combination of these, are most effective in increasing the retention of first-year students (Astin, 1993; Barefoot, 2004; Tinto, 1999).

Standard components of FYE include first-year seminars (FYS), learning communities (LCs), living–learning communities (LLCs), common reading programs, peer mentorship, and extended orientation programs. These programs vary widely across institutions and oftentimes those institutions offer a combination of FYE components based on their unique student demographic, culture, and needs (Tinto, 1993). These programs also vary in how they are implemented and for what demographic. The types of students who experience or participate in FYE also differ greatly as some programs are optional, some are required only for specific demographics of students, some are only available to a limited number of students, and some are required for all. The common theme through them all is student success. Horton (2015) wrote about connecting student success to overall success by saying “student academic success, which in turn would lead to great institutional success” (p. 85).

Two components of FYE, including FYS and LCs will be discussed further. Although both are independent curricular and co-curricular programs, many institutions combine the two with an FYS being one of the courses the students take together as part of the LC. FYS and LCs are also two of 11 reported high-impact practices or HIPs (Kuh et al., 2008). Within the FYS, multiple HIPs were often addressed (Keup & Skipper, 2014). HIPs are addressed in more detail later.

First-Year Seminars

FYS are typically credit-bearing courses that gather first-year students and faculty or staff in small groups to assist in students' transition to college through increased engagement within the institution, increased GPA, and an increased use of resources on campus (Kuh et al., 2013). According to Kuh et al. (2013), "the highest-quality first-year experiences place a strong emphasis on critical inquiry, frequent writing, information literacy, collaborative learning, and other skills that develop students' intellectual and practical competencies" (p. 1). The percentage of institutions with FYS increased by over 25% within the last 20 years (Keup & Skipper, 2014) to an astounding 95% of institutions reporting having offered a form of seminar (Goodman & Pascarella, 2006). With 95% of institutions offering FYS, it has become a foundational element of the FYE. There has been increased research addressing the effectiveness of FYS in terms of persistence and retention. Seminars are typically smaller in size and discussion based, allowing an exchange of ideas and information between students and the instructor. Also, FYS places a strong emphasis on creating connections between learners and building a sense of community. Despite high variance among types of FYS, a common goal stated by institutions is to create a solid foundation for integration into the community both academically and socially, as well as to improve academic performance (Goodman & Pascarella, 2006).

FYS vary in format and type across institutions (Goodman & Pascarella, 2006; Greenfield et al., 2013; Keup & Skipper, 2014). Keup and Skipper (2014), in collaboration with the National Resource Center for the First-Year Experience and Students in Transition, found the breakdown of FYS across the United States to include 39% extended orientation seminars, 19% academic seminars with uniform content, 19% academic seminars on various topics, 4% professional or discipline-based seminars, 4% basic study skills seminars, and 14% hybrid seminars. The primary objectives reported as most important to FYS included connecting students with the institution, serving as an orientation to the institution and its resources, and further developing academic skills (Goodman & Pascarella, 2006), including critical thinking. FYS are taught by a variety of people, but most institutions reported having at least some sections taught by faculty, including a mixture of tenure track, full-time non-tenure track, and adjuncts. About half of the institutions reported having student affairs professionals and other campus professionals teaching seminars.

Oftentimes, FYS address academic skills within their content areas (Goodman & Pascarella, 2006), but they also cover other HIPs (Keup & Skipper, 2014); over half of FYS were reported to contain at least two HIPs. The most common HIPs listed were collaborative assignments and diversity and global learning. Almost half of FYS were writing-intensive as well. Kuh et al. (2008) recommended undergraduate students should participate in at least two HIPs within their first year, and FYS allows multiple HIPs to be addressed together. Keup and Skipper (2014) mentioned FYS “serve as common gateway to high-impact practices and a hub for delivery” and “positive outcomes are enhanced by exposure to multiple HIPs” (slide 60).

FYS have become widely accepted as an intervention for first-year students in higher education, especially for specific subpopulations (Greenfield et al., 2013). Research on FYS took

off in the early 2000s with mixed results, but in recent years more research has begun to show a more positive impact on persistence, especially between the first and second year of higher education (Goodman & Pascarella, 2006), as well as on increasing involvement on campus with activities, peers, and faculty members. Specifically, Goodman and Pascarella (2006) reported students who completed an FYS were 7–13 % more likely to persist to their second year of college, depending on the study and institution. Additional benefits began to surface within the research as well, including increased four-year graduation rates. However, inconsistencies remained in controlling for pre-college and demographic characteristics. Also, it was unclear if the students participated in other interventions which could have impacted their likelihood to persist onto their second year outside of FYS.

Learning Communities

LCs consist of two or more linked courses where students enroll as a cohort in each. Within the LC students work together and with their instructors on common themes through different disciplinary lenses (Kuh et al., 2013). Kuh et al. (2013) wrote, “The key goals for learning communities are to encourage integration of learning across courses and to involve students with ‘big questions’ that matter beyond the classroom” (p. 1). LCs were described by Tinto (2000) as three methods of embedding shared growth within students’ curriculum in college. He listed these as “shared knowledge,” which is gained from studying the same subjects and themes; “shared knowing,” which allows students to get to know one another quickly and more deeply by sharing common classes and experiences; and “shared responsibility,” where students are dependent on one another within groups and learn together; through “shared knowledge” and “shared knowing,” students become more invested in one another’s learning and success (Tinto, 2000, p. 2).

LCs across institutions typically contain three primary common threads included in their purpose and design. One, they traditionally serve as an intervention for first-year students, especially those students indicated as at risk (Barefoot et al., 2012; Greenfield et al., 2013). Two, they link two or more general education courses (primarily first-year composition courses) which maintain the same students enrolled in each linked course. Finally, they range in design from simple co-enrollment in common courses to having an integrated theme throughout all the linked courses.

Studies showed participation in an LC supported more involvement from students (Pascarella & Terenzini, 2005; Zhao & Kuh, 2004) and higher retention rates (Stassen, 2003), along with other developmental benefits, including an increased sense of belonging and connection and a more successful transition to college (Blackhurst et al., 2003). However, researchers debate what was truly driving the positive outcomes in students. Zhao and Kuh (2004) argued LCs “do not directly affect student gains; rather, learning communities provide a fertile environment for student growth through engagement with other influential agents of socialization, such as peers and faculty members" (p. 130). LCs create an environment in which students are exposed to their peers and faculty members in engaging and effective ways that bring about positive outcomes regarding connections to the institution and, ultimately, being retained.

If the structure and space for socialization and connection to peers and faculty LCs create opportunities for increased engagement by students, then providing another layer of structure with a living component could further increase these outcomes. Because of this belief, a third of reported LCs also were designed as LLCs. LLCs are LCs in which students live within the same residence hall or residential floor as peers who are enrolled in the same classes or are part of a

common curriculum. Additionally, learning spaces, such as study lounges, or classrooms are typically dedicated within the students' living space as part of the LLC as well. LLCs link students to courses and on-campus residency with the goal of increasing students' sense of belonging and their connection to the institution, faculty, staff, and peers beyond the classroom environment even more than a standard LC (Altimare & Sheridan, 2016).

Statement of the Problem

Even though many institutions' missions and priorities include ideals of educating the next generation of citizens, the percentage of students who persist to degree completion is underwhelming. This phenomenon begs the question of whether institutions are keeping to their mission if retention rates are low. Not only is a focus on retaining students a moral and ethical issue, but also it has become a financial one for institutions as well. Institutions must focus on retaining students not only from their first to second year but also must ensure they have every opportunity to earn their degrees within four years. Beyond the moral or ethical obligation to provide support for students, some states have already or are working toward changing funding models for public higher education from a headcount model of enrollment to the number of degrees conferred or percentage of graduates in four and six years. The financial and ethical obligations make an awareness of the statistics of first-year retention pivotal.

Simply enrolling or admitting more students to make up for the students dropping out cannot be the solution, especially for four-year, public institutions. Some Midwestern states are experiencing a decrease in the number of high school graduates, creating increased competitiveness for initial enrollment for traditional-aged matriculates. If the focus remains on initial headcount or first-year enrollment, this inflated enrollment may mean an institution admits students who are not as academically strong or likely to succeed at their institution.

Thus, the focus on retaining students, especially between their first and second years at an institution, is paramount to increase persistence, retention, degree attainment, and overall enrollment. A robust FYE that is personalized to the unique needs of the institution and its students may be key. However, the results of studies of FYE vary broadly, which make it difficult to pinpoint what other institutions can generalize and utilize within their own curriculum. Institutions offer a variety of components within an FYE, but few studies demonstrate which combination of programs or curricula are most effective, if any. Another complication is that the available FYE curricula for each student vary. It is important to include a mechanism by which to standardize the FYE components to be able to demonstrate which programs are most effective and for whom the programs will create the biggest impact.

Purpose of the Study

In the United States, first-year students are the most at risk in higher education of not being retained into the second year (Barefoot, 2004). DeAngelo (2014) wrote, "While much is known about retention generally, much less is known about how participation in first-year curricula affects the retention decision" (p. 54). Studies have demonstrated mixed success in FYE programs related to FYS and LCs. Results have often depended on the satisfaction of students who participated in the programs, the comprehensive nature of the curriculum, the environment developed to connect students to peers and faculty, and the academic readiness or preparedness of each student. Few studies exist that were conducted at institutions with more than one FYE, limiting results that might demonstrate whether participation in one program, several, or a specific combination of programs impacts a student's likelihood to persist into their second year and ultimately to graduation.

The purpose of this study was to build a predictive model that is adaptable and can be used by institutions to determine statistically significant interventions that assist in retaining students into their second year of higher education. Most students participate in FYE components during their first semester in college. The model developed in this study intended to predict students' second semester—or end of Year 1—cumulative GPAs. This study compared students who participated in a comprehensive FYE program to those who participated in one element or no elements, while considering demographic and academic characteristics of students. I sought to determine whether FYE programs at one public four-year institution are achieving their goal of increasing the likelihood of retention through the FYE curriculum, which involved both FYS and LCs for specific demographics of entering students.

Rationale and Significance of the Study

As state funding and appropriations toward higher education become more limited, institutions are increasingly dependent on tuition to survive (Mitchell et al., 2019). Public mistrust in higher education was a major trend reported in the *Trends Report 2020* (2020) within the Chronicle of Higher Education. To help combat this mistrust, the Higher Education Opportunity Act required colleges and universities to report on retention statistics, among others (Higher Education Compliance Alliance, 2019). Because of this act, prospective students could use this information when deciding between institutions of higher education. Arguably, these statistics could allow family members to understand better how much attending a particular institution of higher education will cost. Therefore, from both the institution's and student's perspective, retention rates are increasingly an important consideration.

With so much at stake financially for both the institution and the student, dedicating resources toward initiatives and interventions related to increasing retention should demonstrate

a return on investment through increased retention. Therefore, I looked at two of the FYE interventions at a Midwest university to help determine whether the resources dedicated to these interventions were worthwhile in terms of helping strengthen the academic success of students in their first and second semesters at the institution. By examining students who participated in one, both, or neither of the programs, and controlling for available demographic data and variables related to academic preparation, I set out to determine the programs' effectiveness in relation to its goals.

Several existing frameworks and theories helped to structure this study. The methodology of the study utilizes a quantitative approach. Theoretical underpinnings around the issues of student attrition, student learning, and curriculum development are also integrated. Among those utilized are Tinto's theory of student departure (Mayhew et al., 2016; Tinto, 1975, 1993), the student attrition model (Bean, 1980), as well as curricular frameworks including tenets of andragogy (Knowles, 1980a, 1980b) and social learning theory (Bandura, 1986; Boeree, 2006), and discussion and selection of HIPs (Kuh et al., 2008). These theories, including how they are related to the study and how they are embedded in the research study, are described in more detail in Chapter 2.

Research Questions

After controlling for admission/enrollment status and reported demographic information at time of admission (gender identity, race, ethnicity, and socioeconomic status), the following research questions address the broader goal of understanding the relations between a student's second semester GPA and involvement in an FYS, LC, both, or neither.

1. How well do nine measures of control (gender, age, socioeconomic status, race/ethnicity, standardized test scores, high school GPA, admission status, FYE enrollment, first

semester cumulative GPA) predict second semester GPA? How much variance in second semester GPA can be explained by scores on these scales?

2. Which is the best predictor of second semester GPA: gender, age, socioeconomic status, race/ethnicity, standardized test scores, high school GPA, admission status, FYE enrollment, or first semester cumulative GPA?

The following directional hypotheses frame each research question:

1. It is hypothesized that the measures of control will predict a statistically significant portion of the variance in second semester GPA.
2. It is hypothesized that high school GPA will be the best predictor of second semester GPA.

Limitations of the Study

The curriculum of the FYS was tweaked annually and underwent structural changes during the years spanning this study. In addition, students' participation in the various elements of the FYE, including the FYS or LC differed because participation in some programs was required and in others optional. Other important factors related to retention were unable to be considered within this study for various reasons. First-generation status was not studied as the data were not collected by the institution systematically. Part-time students were not included because the overall number was too low which raised statistical and confidentiality challenges. Finally, LLC was another component of FYE at the institution; however, the data including which students participated were not collected in the same manner over the time period being reviewed, creating difficulty in confirming LLC-related courses. Finally, the institution used in this study is a four-year, public institution and the FYE components or demographic of students

studied may not be generalizable to other institutions. Caution is suggested when considering the implications of the study for institutions with differing populations or curricula.

Operational Definitions

- At Risk: at-risk students were defined as "students or groups of students who are considered to have a higher probability of failing academically or dropping out of school" (*"*At-Risk Definition," 2013, para. 1).
- First Year Seminar (FYS): a course that connects a small cohort of students with a faculty or staff member regularly to practice "critical inquiry, frequent writing, information literacy, collaborative learning, and other skills that develop students' intellectual and practical competencies" (Kuh et al., 2013, p. 1).
- Learning Community (LC): a set of two or more linked courses that enroll the same cohort of students across the linked courses and "encourage[s] integration of learning" (Kuh et al., 2013, p. 1) through common topics or readings "through the lenses of different disciplines" (p. 1).
- Non-Traditional Students: for the purpose of this study, non-traditional was defined as a student over the age of 24 or under the age of 17, recognizing the wide-array of definitions and considerations that may make a student non-traditional, including time of enrollment, family and financial situations, and high school graduation.
- Persistence: persistence was defined as "continued enrollment in higher education (regardless of whether this occurs at one or more institutions)" (Mayhew et al., 2016, p. 363) or "to indicate retention for more than one year, whether at the college of entry or at another institution" (Barefoot, 2004, p. 17).

- Retention: In contrast to persistence, retention was defined as “continued enrollment within the same institution (institutional persistence)” (Mayhew et al., 2016, p. 363), or to “describe students’ remaining at a single college or university (or in an academic program) from the first to the second year” (Barefoot, 2004, p. 17).

Conclusion

Throughout this study, I looked to learn more about the potential impact of an FYE curriculum on helping students to transition into higher education successfully through increased second semester GPA. This study looked at two different curricular and co-curricular elements provided in a student’s first year, including enrollment in an FYS and/or participating in a themed LC.

CHAPTER 2

REVIEW OF THE LITERATURE

Retention and persistence are both challenges and opportunities for institutions of higher education. Definitions of persistence and retention used here align with the National Student Clearinghouse Research Center (2016), which identified persistence as a student who stays enrolled in higher education, potentially transferring to other institutions. The definition of retention included students who stay enrolled in higher education at the same institution in which they begin. Various reports and datasets give different statistics for the national retention average from first year to second year in higher education, but ACT (2016) reported all institutional types have, on average, 68.5% retention from first to second year, meaning 31.5% of students dropped out within their first years of college. Jamelske (2009) reported 68.7% of students were retained from first to second year in 2007, which indicated a slight downward trend in a decade. High dropout rates indicate that there is still much room for progress in increasing retention.

This review of literature serves to describe university interventions to increase retention from the first year to the second. It also describes the various types of FYE programs, their impact on and effectiveness in raising student outcomes, the learning theories used in the development of FYE curricula, and the audiences of traditional, non-traditional, and international first-year students in general. Student development, curriculum, and learning theories are discussed to demonstrate how curriculum and instructional design are used within FYE to

improve retention and student learning outcomes, as well as how the theories often overlap and complement one another.

Retention and Persistence: An Issue for All Institutions

Tinto (1993) wrote, “The first step in the course of institutional action for retention is for the institution to ask itself the question, for what educational problem(s) is the institution the proposed solution?” (p. 144). Here, Tinto discussed how institutions defined the term dropout and posed the question of whether the institution should in fact try to retain a particular student. Institutions should consider whether it is the mission of that institution to work toward retaining certain demographics of students. In other words, the student may or may not have a problem that can be solved by being retained, or on the other side of this, the institution may not be serving the needs of that student. In effect, Tinto suggested that institutions need to decide whether attempts to retain at-risk students should be made, considering their circumstances and the potential that it may be best for them to drop out. When institutional missions align with a focus on retention, regardless of the demographic attempted to be retained, many commonalities and areas of focus among students who decide to dropout exist. Those commonalities may include the students’ commitment to the institution, their degree or academic program, and the amount of time they have dedicated to their degree. These have all surfaced repeatedly as important characteristics of students who stay at a given institution (Tinto, 1993; Wilcoxson et al., 2011).

First-Year Experiences Address Retention Concerns

Research indicates several factors and reasons students drop out of college, especially within their first years, including, but not limited to, lack of preparation academically, lack of commitment, inability to afford to stay enrolled, and lack of connection to the institution (Tinto,

1993). To help alleviate and lessen some of these factors, FYE programs were developed. (National Resource Center, 2017). FYE programs vary greatly across institutions and utilize and combine various components including FYS or first-year institutes (FYI), LCs, which also vary in depth and connection via content matter themes, residential options, and additional coursework connections between students. The goals of FYE programs also vary but they generally seek to improve overall GPA of first-year students and retention rates from first to second year and beyond.

The highest risk of student departure exists within the first year of college, even more so early in the first semester (Barefoot, 2000; Jamelske, 2009; Sommers, 1997). Of the students who drop out, more than 50% withdraw by the end of the first year (Jamelske, 2009; Sommers, 1997). Because the pool of students from which to recruit is declining as the population of high school students decreases, the cost of higher education in general and that of recruiting students is increasing. Retaining the students who are recruited has become key (Jamelske, 2009). Existing research shows FYE programs can improve retention of students and "bridge the gap between high school and college education" (Sommers, 1997, p. 243) and thus alleviate barriers to success and increase the likelihood of students returning semester after semester and persisting to completion of their degree. In addition to the transitional issues students experience, they are oftentimes faced with developing autonomy for the first time while establishing their own identities and connecting with and to a new environment and community. Students experiencing all these issues simultaneously are often overwhelmed, causing them to withdraw from their institutions. Several FYE programs exist to provide support and guidance to students by helping them manage all these transitions at once and generally to be successful as students (Tinto, 1993).

In addition to the factors causing students to drop out listed earlier, motivation has also been found to be a key to student success (Morrow & Ackermann, 2012). In their study, Morrow and Ackermann (2012) hypothesized that sense of belonging would be significantly related to retention, and they found components of that to be true. Faculty support, faculty warmth, and peer support were all significant in helping a student feel a sense of belonging and be retained into the second year when measured independently. Motivational attitudes were also significant with regard to students who had specific goals for success or getting a job as compared to their peers who had no defined goals. Therefore, the researchers determined that FYE programs could help create a sense of belonging as well as to identify and build on students' motivation.

The concepts of self-belonging and motivation are such important issues that they were addressed in retention models. Clark and Cundiff (2011) wrote, "While each [FYE program] varies in terms of the content and format, all of the programs are based on the premise that student commitment and success depend on students' sense of belonging to their institutions" (p. 618). The student integration model developed and revised by Tinto (1993) and the student involvement model developed by Astin (1993) both suggested students must experience a social and academic connection to their institution and its community. Social integration within the collegiate community involves both peers and faculty members. Lack of social integration leads to homesickness, isolation, and lack of connection. This lack of integration was a salient issue as students in high school were taught to prepare academically for higher education, but the other aspects, especially senses of independence, social integration, and even managing finances, were not (Clark & Cundiff, 2011). Additionally, Madgett and Bélanger (2008) found students who felt a sense of belonging and were confident they made the right decision on major and institution had an increased likelihood of being retained. Also, students who studied at least 15 hours per

week, did not miss deadlines, and noted that they were not having trouble keeping up with work were also more likely to persist.

Components of First-Year Experience Programs

FYE programs are defined and represented differently from institution to institution, oftentimes having only one component, but other times combining a mixture of programs to form a more comprehensive curriculum specific to first-year students. FYE has grown to include elements such as FYS, learning communities, common read programs, peer mentoring, and extended orientation programs. This review focuses on two of the larger components of FYE: FYS and LLCs.

First-Year Seminars/Institutes

Definitions for FYS have varied across the years and were originally known to be an extension of orientation. Barefoot (1992) broadened the definition of FYS to include,

> a course intended to enhance the academic and/or social integration of first-year students by introducing them (a) to a variety of specific topics, which vary by seminar type, (b) to essential skills for college success, and (c) to selected processes, the most common of which is the creation of a peer support group. (p. 49)

Given this definition, there are several types of FYS including an extended orientation, academic seminar, a seminar with consistent content across sections, seminars focused on study skills, and pre-professional or academic program specific seminar (National Resource Center, 2013). Although widely utilized, studies on FYS showed mixed results when looking at impacting retention rates and GPAs of first-year students as presented below (Jamelske, 2009). Considerations within FYS courses include the length of time offered, primary curricular components within each FYS, and the demographic of students taking the course. A central

repository of scholarship within the field of FYE and transition is the National Resource Center on First-Year Experience and Students in Transition (National Resource Center, n.d.). The National Resource Center administers and houses several assessment tools and datasets on the various components of FYE programs, but their data on and within FYS are immense. In 2013, the National Resource Center conducted a survey of chief academic officers at regionally accredited colleges and universities, to which 24% of institutions responded (n = 896). From this report, 74.4% of four-year institutions reported having a FYS course. The majority of reporting institutions indicated having a seminar for special populations, including underprepared students, major-specific, and students needing remediation. According to the survey, "the three most frequently reported objectives for FYS were: (a) develop a connection with the institution, (b) provide orientation to campus resources and services, and (c) develop academic skills" (National Resource Center, 2013, p. 3). The National Resource Center collected information from numerous institutions on their FYE programs, including assisting with and publishing scholarship related to the field.

As mentioned previously, a typical goal of FYE programs is to increase student success or academic engagement, which is oftentimes measured as an increase in retention of first-year students into their second year (Barefoot, 2000; Jamelske, 2009; Porter & Swing, 2006), although this is rarely explicitly mentioned. Increased student success can also mean raising GPAs to avoid academic dismissal and academic probation. In studies conducted at the University of South Carolina–Columbia, in 15 out of 23 years studied, research showed first-year students who participated in an FYS were more likely to be retained into their second years (Jamelske, 2009). However, in a synthesis of similar studies, Pascarella and Terenzini (2005)

warned that many studies on first-year retention and FYE programs did not control for demographic characteristics for college preparedness.

Raising first-year GPA was the goal of one such FYS studied by Clark and Cundiff (2011). Clark and Cundiff defined FYS as "small discussion courses that focus on teaching basic study skills, academic planning, and time management" (p. 618). In this course, students were encouraged but not required to take the course, which increased the internal threat to validity. Despite the authors predicting that the course would raise GPAs, the evidence did not show this to be true, and in some instances, when adjusted for selection bias, GPAs were lower, indicating the course may have had harmful effects on students. The authors concluded this was more likely because of the pre-existing disposition of the students who were recommended to take the course.

In another study, a seminar was developed specifically for at-risk students. The at-risk students were determined by a high school GPA of 2.8 or lower and composite SAT score of 800 or lower upon admission (Connolly et al., 2013). The researchers offered three goals for this course, including assisting students in the transition to higher education; facilitating students' connection to peers, instructors, and peer advisors; as well as helping them develop effective learning skills. Effectiveness of the course was determined by the number of students staying off academic probation and being retained into the next semester or second semester of the first year. More specifically, academic success was defined as "an increase in a student's grade point average at the end of the FYE class; 'academic probation' as a grade point average lower than a 2.0 (on a 4.0 scale), and 'retention' as a completed registration for the following semester" (p. 4). Overall, the goals were met, and the course had an impact on student's GPAs, which provided different results from the study by Clark and Cundiff (2011).

Next, DeAngelo (2014) took research into FYS a bit further by honing in on the seminars' successes and failures. Similar to Clark and Cundiff (2011), DeAngelo (2014) found no impact on students' GPAs or retention; however, she wrote, "Institutions need to think more thoughtfully not only about the quality of their offerings but perhaps even more importantly about how well these experiences are integrated and central to the fabric of the institution" (p. 66). One potential impact, which was recommended to be studied further, was existing structures encouraging students to discuss content from their coursework outside of class. DeAngelo (2014) wrote,

> Students who get together with other students to talk about the content of their courses, who study together in groups, who interact intellectually with students from different races/ethnicities, and who interact with faculty are more likely to intend to persist and continue into the second year. (p. 66)

Males had higher attrition rates than females and were impacted the most through their interactions outside of class, along with students who lived off campus. DeAngelo (2014) recommended administrators, faculty, and student success professionals pay attention to and encourage interactions outside the classroom, whether it be via the formal curriculum or informal conversations with students. Additionally, Schrader and Brown (2008) provided a look into the "Knowledge, Attitudes, and Behaviors (KAB)" (p. 311) of students and found differences in attitudes about the FYE program by gender. They found the course impacted attitudes on life and academic skills overall and that the course increased knowledge of students. However, those data did not provide a conclusion that the course was valuable in terms of the course objectives or that the course was effective, similar to the results of Clark and Cundiff and DeAngelo. Students did have significant gains over time with regard to knowledge of resources when compared to others

who did not enroll in the course. The researchers suggested looking more closely into the academic skills gained through FYE courses and that the impact of FYE courses be looked at longitudinally throughout students' entire collegiate careers.

Additional research has been conducted on specific topics typically taught through FYS. In a study completed by Porter and Swing (2006), of five common elements within a FYS, only two were found to have a "substantial impact on early intention to persist" (p. 105), including health education and study skills. The researchers further considered that the impact of health education may have been about the concern shown when talking with students about their health and well-being. In an FYS taught within the geography department, students who completed the FYS were found to have experienced fewer academic problems during the first semester, dropped fewer classes, felt a stronger connection to the institution, and felt there was a stronger support environment because they knew where to go for help in comparison with their peers who did not take the course (Sommers, 1997). Students who completed FYS at this institution were retained at 72% while peers who did not participate in a FYS were retained at 66%.

FYS have become a staple among the vast majority of institutions, despite these mixed results. Differences in student demographics, curricular elements of the FYS, and instructors of the course make it hard to determine why some FYS are effective and others are not. The goals of FYS, whether it be to connect students to peers, raise GPAs, increase a likelihood of retention, or all the above, must be clear as well to determine whether the FYS is achieving its goal. As discussed, FYS oftentimes contain multiple curricular components to assist in meeting their goals for students. The next most common HIP or FYE element are LCs, of which FYS are oftentimes connected.

Learning Communities

LCs have existed for over a century in various forms but most traditionally are geared toward serving as an intervention for first-year students in assisting with their success in college (Greenfield et al., 2013). A simplistic definition, provided by Laufgraben (2005), described LCs as "clusters of courses organized around a curricular theme that students take as a group" (p. 371). Known for being effective interventions for first-year students, 90% of institutions reported offering some form of LC opportunity (Barefoot et al., 2012). Like FYS, LCs vary greatly in scope, type, format, and approach. LCs can be a series of courses in which the same cohort of students is enrolled. They may include a residential component where students take a course or courses together and live on the same floor or in the same residence hall. They may also be connected to a theme or topical interest.

Peters and Stearns (2003) conducted a study on an LC which had an embedded theme of environmental issues throughout. The researchers found that when an LC connected experiential and project-based learning with a theme and involved faculty in and outside the classroom, students experienced increased interest, critical thinking, and understanding of civic responsibility. Their model for the LC involved three parts: two lecture courses from different disciplines approaching the theme from different perspectives; service learning or community engagement connected to the theme; and a course named the "Reflective Tutorial" (Peters & Stearns, 2003, p. 334), in which students made connections between the other coursework and their experiences within the community. By integrating a common theme across three courses and community engagement, Peters and Stearns discovered, "The shared experience drew the students into an environment where it was acceptable to cross boundaries between disciplines.

By providing a reason to learn the lecture content, we motivated the students to engage fully in their courses" (Peters & Stearns, 2003, p. 341).

The communal aspects of LCs have been found to create positive outcomes for students with regard to engagement, both academically and socially, at the institution (Altimare & Sheridan, 2016). Some argue that LCs are not instigating the positive outcomes, rather the environments they create allow for increased interaction where peers share common interests and concerns (Zhao & Kuh, 2004). Crook and Mitchell (2012) coined the term "ambient sociality" in reference to spaces created for mutual learning and socialization. They wrote, "Students appeared to gain inspiration or reassurance from merely being among others they knew were in a shared predicament: that is, one of intentional and systematic learning (i.e., 'study')" (Crook & Mitchell, 2012, p. 136). LCs create space for learning in non-classroom spaces, especially when connected to a residential environment. In the study conducted by Altimare and Sheridan (2016), the researchers asked students about where their learning occurred. The most prominent response was classrooms; however, study rooms were not far behind. The researchers also found above and beyond physical space, a "second level of architecture, consisting of social ties, connections, and relationships that are facilitated by the proximity of people in this community" (Altimare & Sheridan, 2016, p. 8) existed. Their findings indicated a pivotal importance to the space used throughout LCs, both classroom and non-classroom spaces, and that learning spaces outside the classroom were a worthwhile investment with regard to academic gains and increased engagement among students participating in learning communities.

LLCs simply have an added residential component to the concept of a traditional LC (Altimare & Sheridan, 2016). In many instances, LLCs allow for students to participate in their community all within the residence hall in which they are residing, including classroom space,

non-classroom space, and their residence. Similar to typical LCs, LLCs have several variations. Stassen (2003) explained three varieties represented at her institution alone. First, the Residential Academic Program or RAP consisted of students living in the same residence hall and enrolling in the same freshman-writing course. Other general education courses were offered as options and some were taught within the residence hall. Second, the Talent Advancement Program or TAP was a more selective form of RAP that included 13 majors. These students were enrolled in at least two common courses and an FYS designed to connect them with their academic department's faculty. Finally, the Honors College LC allowed honors-enrolled students to share common coursework within a theme of environmental science like that of Peters and Stearns (2003). All three program models were found to have significant positive outcomes on academic performance but most significantly for the RAP model.

Similarly, Rollins College in Winter Park, Florida, instituted an LC known as the Rollins College Conference, which expands the FYS to include the following: additional instructional hours for exploring topics of interest to the faculty, intentional time for community building, and increased campus engagement (Eck et al., 2007). Eck et al. (2007) further explained that the LC at Rollins College employed peer mentors, who served as volunteers in introducing students to student life at Rollins using their own lessons learned, setting goals, and helping to keep them up-to-speed with important information at the school. More recently, Rollins College implemented an LLC for about a third of its students in which they live together, take at least one class together, and have some instructional time in their residence. Because of the program's success, the program grew to house more than half of first-year students (Eck et al., 2007). The authors in this study defined success as increasing student engagement with an LLC, which includes several categories. Eck et al. found students enrolled in the LLC were more likely to

develop increased knowledge of wellness and grow their critical thinking skills. Because of the marked success of these initiatives, Rollins later required all first- and second-year students to live on campus.

Not only is overall retention of students a concern, but also some institutions and particularly some degree programs experience lower than average retention rates within their major. Having specific majors where students struggle more in the first semester likely means those students are more prone to drop out of their academic programs and change their majors, impacting retention within specific majors, academic schools, or colleges within a larger institution. Students in engineering and physical sciences, for instance, tend to have higher attrition than institutional averages, according to the U.S. Department of Education (Shushok & Sriram, 2010). Within these programs, more than 50% of students left those majors within their first years. Because of the notably higher attrition within engineering and physical sciences, one institution created a new residential space to house engineering and computer science students in an integrated fashion using an LLC. Shushok and Sriram (2010) found the physical living space of these students with common interests created an environment conducive to study groups and students met informally to discuss course content. Students in the LLC reported higher satisfaction with their academic programs than their peers who were not part of the LLC. Increased peer-to-peer interaction and student-to-faculty interaction were found, along with increased satisfaction with the living environment. According to the authors, the results of this LLC were impactful enough to justify the expense it took to coordinate such a program and increasingly legitimizes the need for student affairs and academic affairs to collaborate around issues such as these.

By developing student living space that is dedicated to fostering connections among peers and faculty, deeper integration into both the community and the institution is likely to occur (Astin, 1993; Soria & Taylor, 2016). Several studies have showed that students who participate in LLCs have a deeper engagement with the institution and curriculum and a more positive outlook on their environment (Kuh, 2005; Soria & Taylor, 2016). These programs are also known to smooth the transition to higher education and to increase academic achievements (Inkelas et al., 2006; Pascarella & Terenzini, 2005).

Faculty and Staff Involved in First-Year Experiences

The importance of faculty was made explicit by DeAngelo (2014), who stressed faculty of first-year students, residence life staff, and other campus professionals are especially important to a successful transition of students into higher education. Those professionals were also pivotal in helping to break down barriers to success for new students. DeAngelo (2014) found disengaged students, who were defined as students who did not discuss their academics with others, especially peers outside the classroom, were a "very real risk to retention" (p. 66). DeAngelo found disengagement of students with campus professionals was a primary factor in a student's reason to leave an institution. An even higher risk was students who chose not to engage, despite living on campus and participating in environments or FYE programs built specifically to encourage interaction between faculty and students. These students' probabilities for success in being retained were much lower than their peers who chose to interact and engage.

Part of the barrier of engagement for students was the perception of students on how approachable their faculty were. The approachability of instructors was found to be a significant factor of why students stay at an institution or leave (Wilcoxson et al., 2011). Additionally, the student perception of faculty and staff support for learning and decision making was found to be

an important factor in a student's decision to stay. Wilcoxson et al. (2011) found first-year students were especially sensitive to "interpersonal interactions with administrative and teaching staff, with concern focusing on issues of availability and empathy" (p. 343).

Faculty who were successful at teaching an FYS or within FYE programs were found to be more encouraging, concerned, and willing to redirect students to other campus services such as advising and counseling (Sommers, 1997). These faculty were trained to take a more student-centered approach, be flexible and adaptable to providing instruction that appealed to several learning styles, and provide predominantly active rather than passive learning techniques (Tinto, 1993). Because faculty within FYE-related courses were oftentimes a student's first exposure to learning in higher education, they were more detailed in their expectations, provided more concrete examples for students, and had clear objectives to make students aware of expectations to be met at this level. Best practices and a primary principle, according to Tinto (1993), involved "frequent and rewarding contact between faculty, staff, and students" (p. 148), whereas faculty provided feedback early and often and encouraged active involvement in the classroom by all first-year students (Tinto, 1993; Wilcoxson et al., 2011). Students who indicated they "did not have any instructors with strong teaching abilities" (Madgett & Bélanger, 2008, p. 89) were less likely to persist to the next semester.

Theory to Practice

FYE or programs designed to assist in the successful transition of students from secondary to post-secondary education are made of a series of curricular and co-curricular components. When combined and focused appropriately for each institution's demographic, the goal of these programs is to have an impact on heightening student engagement, GPA, and likelihood of retention; however, common concepts that are effective on one campus may not be

on another, as demonstrated in various studies mentioned previously. Several curriculum and student development theories played a role in the development of this study, including active learning, adult learning, and experiential learning theories, as well as theories around student departure, attrition, and practices in higher education that have high impact on learning outcomes.

Curriculum Theories

Even in the infancy of curriculum development as a field of study, theorists like Bobbitt (1941) expressed the importance of "The Good Life" (p. 3) and how curriculum played a role in his definition of a good life, including its connection to general education for young adults, aged 18–22. Bobbitt saw education and this type of curriculum as part of life for the educated individual. He expressed the need for schools to develop intellect and curiosity rather than train students for a specific job, since neither the future jobs needed nor the interests of the learners could be predicted. Bobbitt focused a great deal on the role of the teacher, who in his theory was responsible for assisting students in their own learning so that they remain curious and interested in becoming lifelong learners. This point furthers what DeAngelo (2014) found in the importance of the role of faculty in a student's transition, by connecting academic ideas with that of experiences outside the classroom, as these benefit student learning and increase engagement. Additionally, components of FYE programs started to form during Bobbitt's time, including early forms of LCs. His ideologies on connecting students via general education and helping students find common purpose aligns with intrinsic goals of many LCs, including those studied by Shushok and Sriram (2010).

Bruner (1960) expressed his belief that children were problem solvers and could solve any problem at any stage if given the appropriate instruction and tools. Rather than focusing on

rote memorization, Bruner pushed the need for a practical approach to teaching including readiness for learning, critical thinking, and motivation for learning. Bruner's theory of learning laid out a constructivist approach to curriculum, teaching, and learning. He believed learners need to play with the problems at hand actively to learn how to solve them rather than be told how to do so. If motivation, as expressed by Bruner (1960) and Morrow and Ackermann (2012), critical thinking (Bruner, 1960; Eck et al., 2007), and readiness for learning (Bruner, 1960; Knowles, 1980a) were all important approaches to curriculum and successful retention of first-year students, these key areas can serve as a guide in developing a framework for the curriculum of an FYE.

Learning Theories

Even if an FYE program embeds hands-on learning as Bruner (1960) suggested, Kolb's (2015) model of experiential learning is also critical to consider for first-year students entering post-secondary education, as it further delineates how individuals learn and approach learning. Experiential learning, when done well, is individualized enough to meet the needs of each learner (Schubert, 1993). Kolb (2015) described self-awareness as critical in helping guide and grow learners' strengths and becoming cognizant of areas that need further exploration. Kolb delineated four learning style roles, including accommodator, diverger, converger, and assimilator. Themes begin to emerge in what has been successful within FYE programs as connected to theory; for example, Peters and Stearns' (2003) study showed students' reflection as a pivotal piece in connecting concrete experiences to what was being learned in the classroom. Additionally, active experimentation with faculty members was effective in the LC studied by Shushok and Sriram (2010). However, seminars that focused on teaching students academic skills with little opportunity for practice or experimentation had little or no effect (Clark &

Cundiff, 2011; Connolly et al., 2013). These learning theories could all be used in conjunction with Schlossberg's transition theory to help first-year students better understand their own learning style and approach to learning.

Although the traditional-aged college student is defined as being between the ages of 18–24, Knowles (1980b) considered them on the cusp of transitioning from a need for pedagogy to a need for andragogy or adult learning. Knowles (1980a) defined adult learners as those who are self-directed in their learning and who "undertake to learn something on their own" (p. 96). Knowles (1980a) explained that adults need and have a desire to be self-directed and they do so when they "come to perceive [themselves] as being essentially responsible for [their] own lives" (p. 96).

Albeit not always a quick or easy process, the first year of college involves a great deal of shift in the responsibilities of students' lives from living with parents and guardians to living on their own. Bruner's (1960) experiential learning theory explained that adult learners need to be able to play with concepts, including making errors for maximum learning. Additionally, the literature suggests that motivation and engagement are indicators of success for FYE (Eck et al., 2007; Morrow & Ackermann, 2012).

Peters and Stearns (2003) posed the following question that they felt synthesized the challenge of faculty and staff involved in educating students during the FYE: "How can course content be made personally relevant to the student?" (p. 333). They attempted to approach this question from three different angles, including presentations in lecture, experiential components that connect to a local issue of interest, and meetings that instigate reflection between peers that are both writing and communication in nature.

Student Development Theories

The concept of student development, although vaguely defined in post-secondary education, typically serves as a philosophy that helps guide practitioners in higher education, or more specifically, the student affairs field, to assist students to grow intellectually and emotionally (Patton et al., 2016). Theories have emerged with a focus on student development which help guide and analyze the process of student change throughout higher education. Theories emerged in the early 20th century and have continued to evolve ever since. Patton et al. (2016) discussed several theories that were developed throughout the century, naming Sanford's work in 1967 on "student development as a function of cycles of differentiation and integration and of the need to balance adequate challenge with adequate support for student development" (p. 27), which has become a staple in the profession. Not much later, two theories around student attrition, departure, and retention were developed: Tinto's theory of student departure and Bean's student attrition model. These two theories serve as the primary frameworks of this study.

Tinto's Theory of Student Departure

Tinto's theory of student departure is one of the most well-known models designed to explain or predict students' attrition from an institution (Barefoot, 2004). Tinto's model, originally based in a theory on suicide, utilized a three-stage process that viewed a student's integration into their post-secondary institution though the lens of both their social and academic environment, claiming that both are pivotal components of whether a student would remain in college or at that institution (Barefoot, 2004; Tinto, 1993).

In response to criticisms, Tinto (1993) created a revised longitudinal model that took into consideration pre-existing attributes of students. These attributes included a student's family background, their skills and abilities, and their elementary and secondary education. These

attributes, in combination with the intentions, goals, institutional and external commitments of the student, play a role in how well the students integrate into the institution. With all these pre-existing dimensions, Tinto then divided the academic and social systems into subsections, including formal and informal components. According to Tinto, a student's likelihood for departure depends on how well they perform academically and the degree of faculty/staff interactions they have within the academic system. On the social side, their likelihood of departure depends on their involvement in activities outside the classroom, along with their interactions within peer groups. Their social and academic integration then plays a role in how their intentions remain or change, along with their goals and institutional commitments, ending with a decision to stay or leave.

Critics of Tinto's model have discussed and debated components of the theory, including which elements—academic and social integration— were more important (Barefoot, 2004). In addition, Tinto has revised and responded to criticisms regarding the original model's focus on undergraduate students and exclusion of non-traditional students. Other criticisms stated that the model oversimplified issues for demographic majorities and excluded issues unique to minority students, particularly those of color. Discussions occurred on whether Tinto considered all the variables associated with attrition for all student types (traditional, non-traditional, online) and whether the model was achievable and realistic for most students, which would include students successfully moving through all three stages—separation, transition, and incorporation—in a relatively short amount of time. In other words, skeptics were unsure that it is realistic to expect students to separate and incorporate themselves into college norms and expectations so quickly (Tierney, 1992). Regardless of the criticisms, Tinto's model continues to be used as a framework

for numerous studies considering the retention of first-year students and students in general in higher education (Wilcoxson et al., 2011).

Bean's Student Attrition Model

Bean's (1980) alternative model of student attrition, like that of Tinto's theory of student attrition (Tinto, 1993) which was rooted in process and causes of suicide, was adapted from another theory, that of employment turnover. Bean's theory was developed and validated on non-traditional students, students of color, and distance learners. Like the theory of student departure, the theory of student attrition highlights how demographics, background characteristics, and interaction all play a role in both satisfaction and commitment to an institution, therefore explaining why students stay or leave. Bean's model focused more on the factors external to an institutional process, including family obligations, finances, and opportunities at other institutions, and how they affect students' motivation, abilities, and incentives to stay (Burrus et al., 2013).

High-Impact Practices

Kuh named 10 "High-Impact Practices," or HIPs (Kuh et al., 2008; Kuh et al., 2013), in higher education that research has suggested impact the success of students through increased engagement and retention. Several of the HIPs are elements of FYE programs, including FYS, LCs, and common experiences, such as a common reader program or participation in a set of common courses around a theme. Additional HIPs include "writing-intensive courses," "collaborative assignments and projects," "undergraduate research," "diversity/global learning," "ePortfolios, service or community-based learning," "internships," and "capstone courses and projects" (Kuh et al., 2013, p. 1). Several of these HIPs could also occur as a component of other FYE programs. For example, collaborative assignments and global and service learning are all

oftentimes components of FYS and LCs. The FYS and LCs which have been reviewed at length at Institution University are two common HIPs which can be included as elements of institutions' FYE.

Conclusion

Despite current disagreement and questions around the value of a college degree, data and statistics have demonstrated that students who graduate from college are likely to earn more financially, to be more satisfied within their career, to be healthier, and to improve their communication, reasoning, and critical thinking (Pascarella & Terenzini, 2005) than those without degrees. However, many students who start college are likely to drop out before graduating (Tinto, 1993). Because of the startling number of students who drop out before their second year in higher education, most institutions have incorporated an FYE or intervention specifically geared toward helping first-year students succeed (Goodman & Pascarella, 2006). The most common interventions tend to include two HIPs, studied here in detail: FYS and LCs. Goodman and Pascarella (2006) reported that 95% of institutions have an FYS. Numerous studies existed on the impact of FYS and LCs on student success; however, they tended to be institution specific and often excluded the type of student and the type of impact on the student. Specifically, research on the impact of GPA or likelihood of being retained based on participation in an FYS differs depending on the institution and format of the FYS, but overall, the seminars tended to have positive outcomes for students. Despite sweeping studies on retention and persistence, it is difficult to make generalized conclusions about the impact of FYS. Burrus et al. (2013) offered a report on persistence and retention and developed a research agenda that included increased research on commuter student populations, urban institutions, and multi-institutional studies. Additionally, the researchers found an increased need for studies

related to persistence that consider demographic variables, especially that of socio-economic status. Predictors of retention seemed to be nuanced and specific to the type of students and their motivations and integration into the college atmosphere. Therefore, institutions have begun creating programs directed at the institution's unique demographics to increase the program's likelihood of success. Some institutions have experienced gains in retention because of these efforts, while others have increased expenditures without much return on investment (Jamelske, 2009).

CHAPTER 3

METHODOLOGY

The purpose of this study was to determine if an institution's FYE program impacted students' likelihood of success within higher education. This question was studied by viewing second semester GPA as a window into the ability of a student to be retained into the second year of higher education. Several measures of effectiveness for FYE programs exist. In a study by Connolly et al. (2013), the effectiveness of FYE programs was measured by an increase in a student's GPA. The two components of the FYE studied included FYS and LCs, which were both designed to be interventions for first-year students within their first semester to help ease the transition into higher education. The FYE curriculum was designed to provide a supportive environment that increased students' academic success. The FYS provide students an opportunity to learn and practice academic skills needed to succeed within higher education, while also building a connection to their peers, faculty members, and institution and creating a sense of belonging within and to the institution. LCs provide additional opportunities for peers to connect via linked courses, social groups, events, and sometimes between their on-campus residences and peers within their hall. LCs were considered two or more themed or linked courses, with or without a live-in component as in LLCs. Both FYS and LCs occur within the first semester of a student's degree. Students who are placed on academic probation can enroll in an FYS during their second semester as well.

Students who were included in this study had completed their first year at the institution and had participated in an FYS, LC, both, or neither. Because the goals of both FYS and LCs are to increase retention and persistence of students within the institution, this study analyzed whether participation in an FYE curriculum had a statistically significant effect on student GPAs in the semester after their enrollment in FYE, if any, and therefore their ability to be retained into their second year of study.

Research Questions and Hypotheses

The following questions were used in the research design:

1. How well do nine measures of control (gender, age, socioeconomic status, race/ethnicity, standardized test scores, high school GPA, admission status, FYE enrollment, first semester cumulative GPA) predict second semester GPA? How much variance in second semester GPA can be explained by scores on these scales?
2. Which is the best predictor of second semester GPA: gender, age, socioeconomic status, race/ethnicity, standardized test scores, high school GPA, admission status, FYE enrollment, or first semester cumulative GPA?

The following directional hypotheses frame each research question:

1. It is hypothesized that the measures of control will predict a statistically significant portion of the variance in second semester GPA.
2. It is hypothesized that high school GPA will be the best predictor of second semester GPA.

Sample

Secondary or archival data including student demographic and academic information from a public, Midwestern institution, referred to as “the institution” throughout the study, were

requested via email from the office of Institutional Research at the institution for first-time, full-time students who began at the institution during the fall semesters between the years 2013 and 2017. These data allowed me to analyze five cohorts of students. All degree-seeking, first-year students at the institution during that timeframe were included in the dataset, excluding those coded as new transfer or part-time students.

The Institution

The institution from which the data were collected was a mid-sized, four-year, coeducational, public institution of higher education. The institution had a total enrollment over 13,000 students, offering undergraduate and graduate degrees at the time of the study. The institution reported enrolled students from all 50 United States, five territories, and close to 70 countries around the world. The institution reported in its enrollment summary (Institution University, 2018) close to 10,000 in-state students and over 3,000 out-of-state students enrolled during Fall 2018, with 67% of the student population identifying as White, 16% as Black or African American, and all other races under 10%. Minority students made up 25% of total enrollment.

FYS at this institution over the timeframe analyzed included both full-term courses as well as eight-week courses. Within the courses, instructors taught academic skills including time management, study skills, and critical thinking, as well as covered resources at the institution including academic advising, financial aid, and health and wellness. LCs varied in structure with some connecting students enrolled in a general education course to an FYS and others connecting multiple courses within the student's major. The overarching goal of LCs at the institution was to build connection between students and instructors as well as a sense of belonging at the institution to increase academic performance and retention.

Data Collection

The student data on FYE involvement used for the study were not collected directly. Rather, secondary data that were not publicly available, but had been gathered by the institution were used. Permissions from the dissertation committee, department chair, and approval from the Institutional Review Board (IRB) were obtained to gain access to the data. I discussed the data request with the offices of Institutional Research (Institution University, personal communication, December 17, 2018; March 29, 2019) and Registration and Records (Institution University, personal communication, December 20, 2018; March 29, 2019) to verify its existence and ability to be compiled. An agency letter was granted from the institution confirming permission to access the data and that the data existed and could be compiled.

The data requested included information located within private student records and therefore was de-identified to the furthest extent possible by the institution prior to being shared. This de-identification provided a safeguard for the students as well as ensured compliance of the Federal Educational Rights and Privacy Act (FERPA). The data requested did not include names, addresses, social security numbers, or student identification numbers. Rather, to match the student data across several databases, including their FYE courses taken, the Personal Identification Master Key (PIDM) was requested. The PIDM was a unique identifier only used within the student information system (SIS). This identifier was only used by those with direct access to the SIS at the institution and was unique to everyone within the system. The PIDM was not used for any external or transactional purposes and was not readily available to students, staff, or faculty at the institution. It is important to note that PIDMs are not student identification numbers. I did not have access to the SIS and therefore had no ability to match the PIDM to a student record.

No risks to participants were anticipated as the data requested did not include any personal information that could lead to identifying the student without access to the SIS. Issues of confidentiality were addressed by using the PIDM in lieu of the student ID. The data were stored on a secure and encrypted drive/server. The data will be destroyed, in compliance with IRB regulation at the institution, three years after completion of the study.

Data reported in the study did not include the names or identification numbers of the students, as this information was not shared with me. The data reported within the study were in aggregated form by cohort, race, gender, admission status, and FYE involvement, to further safeguard participant identification. Aggregated categories with fewer than 30 students were combined with larger categories to limit the risk of students being identified further.

Statistical Methodology

Criterion Variable

When using multiple independent or predictor variables, the statistical method of multiple regression can be used to predict one continuous criterion variable. This study utilized a multiple linear regression with the nine predictor variables and one criterion variable to test significance within the model. The criterion variable used was second-semester cumulative GPA. Second semester cumulative GPA was earned after two semesters (Fall and Spring) at the institution. Using the GPA as a criterion variable allowed for the development of a predictive model that can be applicable to other institutions.

Predictor Variables

Nine predictor variables were analyzed within this study to look for statistically significant variables that predicted a student's GPA. The variables were chosen based on current research that indicated a gap in the literature, where demographics and academic preparation

variables were not aggregated or compared in relation to successful retention of first-year students participating in FYE (Pascarella & Terenzini, 2005).

The predictor variables identified are referenced in Table 1. All predictor variables that were categorical in nature were identified and dummy coded for analysis. The coding process can be seen in Table 2. Continuous variables were used as reported in the data with no manipulation. The demographic data considered included: gender (female or male), race/ethnicity as classified by the institution (nonresident aliens; Hispanic/Latino; Black or African American, non-Hispanic; White, non-Hispanic; American Indian or Alaska Native, non-Hispanic; Asian, non-Hispanic; Native Hawaiian or other Pacific Islander; two or more races, non-Hispanic; Race and/or ethnicity unknown), traditional/non-traditional student status, and socioeconomic status. To code traditional and non-traditional student status, date of birth was used to first determine age. The age group 17–21 was categorized as traditional and those greater than 21 were categorized as non-traditional. The age was calculated as of September 1 of the student's entry term. One student in the data was younger than 17 and coded as non-traditional. To determine socioeconomic status, the Federal Pell Grant was used. Students who were offered the Pell Grant were noted as "eligible" and those who were not offered were categorized as "not offered" (see Table 2). The Federal Pell Grant is awarded to students depending on financial need, costs to attend school, and enrollment status at an institution (U.S. Department of Education, 2015). Of note, eligibility for the grant was used rather than actual usage because of the way in which data were gathered by the institution.

Table 1

Predictor Variables

Variable	V1	V2	V3	V4	V5
Gender	Female	Male			
Age	Traditional ≤21	Non Traditional >21 or <17			
Pell Grant Eligibility	Not Offered	Offered			
Race/Ethnicity*	Latino	White	Black	Asian	…
SAT Score (including ACT converted)					
High School GPA					
Admission Status	Conditional	Regular			
FYE Enrollment	No FYE	FYS Only	LC Only	Both FYS and LC	
Semester 1 Cumulative GPA					

* Variables with more than four categories unable to display on the table.

Table 2

Predictor Variable Coding

Original Variable (Code in SPSS)	Code 0	Code 1
Gender (Gender)	Female	Male
Pell Eligibility (Pell)	Not Pell Eligible	Pell Eligible
Age (Traditional)	Non-Traditional	Traditional
On/Off Campus Living (Residence)	Commuter	On-Campus
Admission Status (Admission)	Conditional	Regular
Race: Nonresident Alien (NonResident)	Does not identify	Identifies
Race: LatinX (LatinX)	Does not identify	Identifies
Race: Black (Black)	Does not identify	Identifies
Race: White (White)*	Does not identify	Identifies
Race: Native American (Native)	Does not identify	Identifies
Race: Asian Pacific Islander (Asian)	Does not identify	Identifies
Race: Hawaiian (Hawaiian)	Does not identify	Identifies
Race: More than one race (Multiracial)	Does not identify	Identifies
Race: Unknown (Unknown)	Does not identify	Identifies
FYE Enrollment: No FYS or LC (FYE_NONE)*	Does not apply	Applies
FYE Enrollment: FYS Only (FYE_FYS)	Does not apply	Applies
FYE Enrollment: LC Only (FYE_LC)	Does not apply	Applies
FYE Enrollment: Both FYS & LC (FYE_BOTH)	Does not apply	Applies

* Variables removed from the model to serve as referents.

Table 3

First-Time Degree Seeking Enrollment

Academic Year	Male	Female	Total
2013–2014	1,108	1,540	2,648
2014–2015	1,173	1,558	2,731
2015–2016	1,233	1,533	2,766
2016–2017	1,001	1,430	2,431
2017–2018	1,165	1,512	2,677
Totals	5,680	7,573	13253

Note. Data for first-time degree-seeking enrollment from Institution University.

Predictor variables related to academic preparation included high school GPA; standardized test scores, including the highest composite SAT or ACT score that were then converted to SAT scores for consistency; and admission status (regular or conditional as

determined by the institution). Another variable considered within the study as it related to the predicted success of students, was their residence while enrolled. Residency was categorized as those with an on-campus address (living in an institutionally operated residence hall or apartment) or off-campus (considered a commuting student) as of September 1 of their entry term. Finally, enrollment or participation in an FYS, an LC, both an FYS and LC, or in neither an FYS nor LC was coded and analyzed.

LCs were tracked differently at the institution during the study timeframe. LCs were coded as co-requisite courses between 2013 and 2016. Therefore, a list of courses that were coded as co-requisite was identified by the institution and provided within the dataset. A representative at the institution then advised on co-requisite courses that were part of the FYE curriculum (Institution University, personal communication, March 29, 2019; April 8, 2019). Students enrolled in those identified courses were matched via the PIDM to the demographic and academic preparation data. For students who enrolled at the institution in 2017, an attribute in the SIS was added allowing the University's Institutional Research department to directly code courses as a LC.

Sample Size and Confidence Level

Multiple regression was the statistical method used in the study to predict second semester GPA, with 15 initial predictor variables being used to predict one criterion/response variable at a time. The goal was to determine which variables were statistically significant in predicting a student's likelihood to be retained within the institution as measured by their second semester GPA, controlling for participation in the FYE curriculum. Table 3 displays the number of students who met the criteria for the study from 2013–2018, making up the population for the study.

Based on the dataset received, the population included 13,253 students. I utilized a confidence level of 95% or above with a margin of error at 5% or less. At a 95% confidence level and a margin of error of 5%, the minimum sample size needed for the study was 374 students, which was well surpassed.

Research Design

Multiple linear regression was used as the statistical analysis method of design within this correlational study. Multiple regression was chosen because of its ability to utilize data with multiple predictor variables to estimate one criterion variable, in this case GPA. The terms *criterion* and *predictor* variable were used, because as Frey (2015) discussed unless there is a cause-and-effect relationship, variables are not independent or dependent and do not cause a change in each other but may help to explain them. The criterion variable (formerly known as the dependent variable) was the variable the model was trying to explain or predict based on other criteria. The equation that resulted from the multiple regression method allowed predictions to be made about the impact of participation in the FYE curriculum, along with other demographic and academic preparation predictors, on the GPA of students finishing their first year in higher education.

Additionally, regressions provided a means by which to control for demographic variation within the sample studied. Because multiple factors play into a student's ability or decision to remain at an institution, causation could not be determined, so a correlational design was most appropriate. This design was meant to determine whether a relationship existed between the FYE components and first-year academic success. In the current literature, it was unclear which demographic characteristics and which elements of academic preparation played a role in the academic success of students when combined with other variables. The goal within

this research design was to determine if a specific combination of demographic and academic preparation variables, along with enrollment in FYE, created a statistically significant change in the academic ability to persist into the second year of higher education.

Running regressions with a large number of predictor variables required several steps to ensure statistically sound models were used. Before running an actual analysis, cleaning of the data occurred. All data points were reviewed for missing information. After identifying and labeling missing information and coding the data, the data were loaded into IBM SPSS Statistics Version 25 (IBM Corp., 2017) for analysis.

The multiple regression analyses generated a R^2 and adjusted R^2 statistics, as well as the standard error in the regression. The R^2 helped determine the proportion of variance in the criterion variable, which could be accounted for by each predictor variable. The adjusted R^2 adjusted the amount of variance based on the number of predictor variables within the module. Finally, the standard error determined the average distance of the data points from the regression line in terms of the criterion variable.

Additional regressions were run to check individual relationships between the various predictor variables and to identify strong correlations between predictor variables that may dilute the results of the multiple regression or generate an issue of multicollinearity. Predictor variables that showed a strong relationship with one another, or a high variance inflation factor (VIF), were redundant and thus only one of the related variables was used. After these processes were complete, the best fitting model was used to run the regressions and make predictions about the criterion variable—students' second semester GPA in higher education.

The specific processes used to answer each research question were as follows:

1. Research Question 1: Multiple regression was used to determine a model best at predicting second semester GPA and to limit multicollinearity and interaction effects. To analyze the impact of individual predictor variables on the overall model, the stepwise approach was used prior to the final model being run. Once it was confirmed that all assumptions were met and tests conducted, any concerning variables were removed and the final model run using the enter method in SPSS.
2. Research Question 2: The results in the final model used in Research Question 1 were analyzed to address Research Question Two. The coefficients, beta values, standardized and unstandardized statistics were used to compare the contribution of each predictor variable and determine the best predictor of second semester GPA.

Assumptions and Tests

Several checks of the data and the analyses were completed to ensure the most statistically sound results possible. In addition to limiting the opportunity for errors to influence the results, certain statistical assumptions must be met when running analyses. The following tests were conducted as appropriate for the multiple regression:

- Normality. To test for normality within each variable, histograms were created. Histograms provided a visual representation of a normal or non-normal bell curve, which could indicate the potential for outliers within the data.
- Linearity. Linear regressions must be linear in parameters. Scatterplots were used to test for linearity. Additionally, the plot of residuals was reviewed to ensure the majority of residuals were within plus and minus two on both axes to verify linearity between the linear composite of predictors and the criterion.

- Mean of residuals. Scatterplots were used to review the mean of residuals, which must be approximately zero to meet this assumption.
- Homoscedasticity and heteroscedasticity. Homoscedasticity of residuals is an assumption that equal variance exists. Once the regression model was determined, the model was plotted to show how the residuals vary as fitted values increase. To meet the assumption, the resulting line needed to be approximately flat. Heteroscedasticity is present when variance with residuals are not homogeneous across. In other words, the strength of the prediction needed to be the same across all levels of the predictor variable tested.
- Multicollinearity. Multicollinearity was reviewed in multiple ways, but variables were rejected if they had a VIF of above 5.
- Overfitting. Overfitting is defined in the analysis as a large difference between the R^2 adjusted and R^2 predicted statistics making generalizability limited. A predicted R^2 that is much smaller than R^2 is a sign of overfitting.

Summary

While there are numerous studies on the impact of FYE programs, including FYS and LCs, Pascarella and Terenzini (2005) reported that not enough of them took into consideration demographic data along with academic preparation. This study investigated the effect of FYE participation on second semester GPA in college.

CHAPTER 4

RESULTS

Despite ongoing research and interventions to decrease the percentage of students who stop- or drop-out after the first semester or first year, the first year of college remains a time of significant risk for students to not continue their education (Barefoot, 2004). The purpose of this study was to test whether students' participation in the FYE curriculum at a public, Midwestern institution impacted their second semester GPA and therefore their ability to be retained into their second year while accounting for both demographic and academic variables. The FYE curriculum at the institution studied included both FYS and LCs. The goal of these interventions was to increase academic performance, increase engagement, build a stronger sense of belonging, and better prepare first-year students for the rigor of higher education. In essence, the FYE curricula was designed to help students succeed. Success was defined by students' increased ability to persist through to a degree.

This research study looked at nine overarching predictor variables that included the following: gender, traditional/non-traditional status, Pell Grant eligibility, race/ethnicity, standardized test scores, high school GPA, admission status, FYE enrollment, and first semester cumulative GPA. The criterion variable analyzed was second semester cumulative GPA. Multiple linear regression was used to determine if the predictor variables could accurately and significantly predict second semester GPA.

This chapter reviews the quantitative analyses procedures, along with a description of the variables examined. The following research questions were considered:

1. How well do nine measures of control (gender, age, socioeconomic status, race/ethnicity, standardized test scores, high school GPA, admission status, FYE enrollment, first semester cumulative GPA) predict second semester GPA? How much variance in second semester GPA can be explained by scores on these scales?
2. Which is the best predictor of second semester GPA: gender, age, socioeconomic status, race/ethnicity, standardized test scores, high school GPA, admission status, FYE enrollment, or first semester cumulative GPA?

The chapter concludes with a summary of the findings, followed by a discussion of the findings in Chapter 5.

Descriptive Statistics and Data Analysis Procedures

With approval from the Institutional Review Board of the studied institution, records of 13,253 students were collected, coded, and analyzed within SPSS (IBM Corp., 2017). After removing outliers and students with missing data, 11,255 records remained to be analyzed. Before running the initial models, the data was coded based on guidance from Pallant (2013) on running regressions within SPSS (IBM Corp., 2017). Multiple regression cannot analyze categorical variables with more than two codes effectively; thus, several variables were divided and re-coded into individual sub-variables as shown in Table 3. This step was required to allow for referent variables to be used. This process was utilized for two predictor variables: race and FYE enrollment.

Pallant (2013) determined that variables with an *N* less than 15 should be excluded when running regressions. After the variables were coded using the process outlined above, students who

identified as Hawaiian were removed and not analyzed based on this parameter of an *N* less than 15.

Multiple Regression Model

A multiple regression model was created to test Research Question 1: How well do nine measures of control (gender, age, socioeconomic status, race/ethnicity, standardized test scores, high school GPA, admission status, FYE enrollment, first semester cumulative GPA) predict second semester GPA? How much variance in second semester GPA can be explained by scores on these scales?

The initial run of the multiple regression model with the variables identified in Table 1 resulted in a surprisingly high adjusted R^2 of 0.827, showing that 83% of the variance could be explained by the variables included in the analysis. Despite all variables having a VIF below 5, this result demonstrated the need for additional examination for the potential of multicollinearity. Upon examining the bivariate correlations within the model, first semester cumulative GPA appeared to have an outlying impact on the model as shown in Table 4.

Given the results of Model One, the stepwise method was used to better determine the impact of Sem1CumulativeGPA on the overall model. All the same predictor variables were entered into the model. Sem1CumulativeGPA was added last. The adjusted R^2 was 0.358 with all variables except Sem1CumulativeGPA and increased to 0.825 when Sem1CumulativeGPA was added. Given the difference in results, Sem1CumulativeGPA was removed for Model Two.

The enter method of multiple regression in SPSS (IBM Corp., 2017) was used within Model Two to measure the effect of participation in First Year Experience (FYE_FYS, FYE_LC, and FYE_BOTH) curricula on the second semester cumulative GPA (Sem2CumulativeGPA),

Table 4

Model 1 Correlations

Variable	*r*
GENDER	-0.127
TRADITIONAL	0.003
PELL	0.254
NonResident	0.037
LatinX	-0.023
Black	-0.291
Native	-0.006
Asian	0.032
Multiracial	-0.054
Unknown	-0.017
SAT	0.342
HSGPA	0.560
RESIDENCE	0.050
ADMISSION	-0.192
Sem1CumulativeGPA	0.896
FYE_FYS	-0.065
FYE_LC	-0.083
FYE_Both	-0.053

Note. Criterion Variable: Sem2CumulativeGPA (n = 11,255)

while accounting for differences in the outcome based on gender (GENDER), traditional age status (TRADITIONAL), socioeconomic status (PELL), on/off campus housing (RESIDENCE), Race/Ethnicity (NonResident, LatinX, Black, Native, Asian, Multiracial, Unknown), high school GPA (HSGPA), standardized test scores (SAT), and regular or conditional admission (ADMISSION). The regression model was significant (F[17, 10937] = 360.2, $p < 0.05$, $R2$ = .359) and explained 36% of the variance in second semester GPA. Nine predictor variables added with statistical significance to the model. Table 5 shows the partial regression coefficients for model two.

Table 5

Model 2 Partial Regression Coefficients

Variable	Beta (Unstandardized)	Beta (Standardized)
Gender	-0.095	-0.056***
Traditional	0.086	0.014
Pell	0.188	0.112***
NonResident	-0.062	-0.011
LatinX	-0.061	-0.016**
Black	-0.232	-0.120***
Native	-0.073	-0.004
Asian	0.147	0.016**
Multiracial	-0.134	-0.034***
Unknown	-0.167	-0.013*
SAT	0.000	0.046***
HSGPA	0.895	0.519***
Residence	-0.069	-0.032***
Admission	0.243	0.089***
FYE_FYS	0.015	0.008
FYE_LC	0.044	0.015*
FYE_BOTH	-0.011	-0.002

Note. *p < .01, ** p < .05, *** p < .005

Male students achieved significantly lower cumulative second semester GPAs than female students by approximately 0.06 standardized units (β = -0.056, p = < .001) while controlling for all other predictor variables. Those eligible for the Pell Grant achieved significantly higher cumulative second semester GPAs than those not eligible by approximately 0.112 standardized units (β = 0.112, p = < .001) while controlling for all other predictor variables. LatinX identifying students achieved significantly lower cumulative second semester GPAs than non-LatinX identifying students by approximately 0.016 standardized units (β = -0.016, p = .047) while controlling for all other predictor variables. Black identifying students achieved significantly lower cumulative second semester GPAs than non-Black identifying students by approximately 0.12 standardized units (β = -0.120, p = < .001) while controlling for all other predictor variables. Asian identifying students achieved significantly higher cumulative

second semester GPAs than non-Asian identifying students by approximately 0.016 standardized units (β = 0.016, p = .040) while controlling for all other predictor variables. Multiracial identifying students achieved significantly lower cumulative second semester GPAs than non-multiracial identifying students by approximately 0.034 standardized units (β = -0.034, p = < .001) while controlling for all other predictor variables. SAT scores were a significant predictor of higher cumulative second semester GPAs (β = 0.046, p = < .001) while controlling for all other predictor variables. High school GPA was a significant predictor of higher cumulative second semester GPAs (β = 0.519, p = < .001) while controlling for all other predictor variables. Students who lived on campus achieved significantly lower cumulative second semester GPAs by approximately 0.032 standardized units (β = -0.032, p = < .001) while controlling for all other predictor variables. Finally, students who were admitted with regular admission status achieved significantly higher cumulative second semester GPAs by approximately 0.089 standardized units (β = 0.089, p = < .001) while controlling for all other predictor variables.

Of the statistically significant standardized beta values reported--gender, Pell eligibility, students identifying as LatinX, Black, Asian, or multiracial, SAT scores, residence, and admission--all had a similar magnitude of importance within the model. The outlier was the magnitude of high school GPA, which was the most significant predictor. High School GPA predicted a higher second semester GPA by four units, while the next closest variable predicted only one higher.

Testing of Assumptions for Multiple Regression

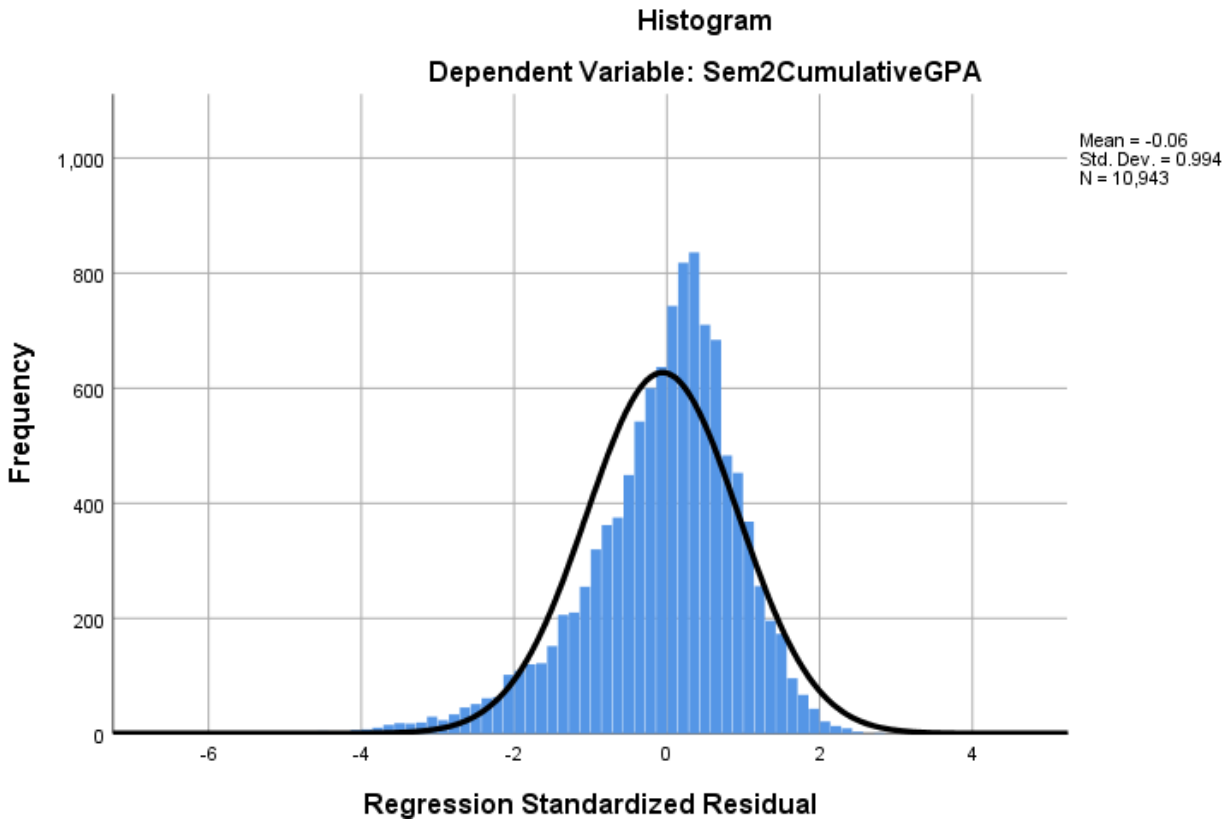
Each multiple regression model was tested to ensure it met the assumptions needed for the analysis, including normality, linearity, mean of residuals, homoscedasticity and heteroscedasticity, multicollinearity, and overfitting.

Normality

A histogram was created for Model Two. Each model's histogram showed a normal distribution. Because of the complex nature of multiple regression, normality should be tested both visually and statistically. Cook's distance was used to ensure each model met the assumption of normality as well. The histogram for Model Two can be seen in Figure 1.

Figure 1

Model Two Histogram

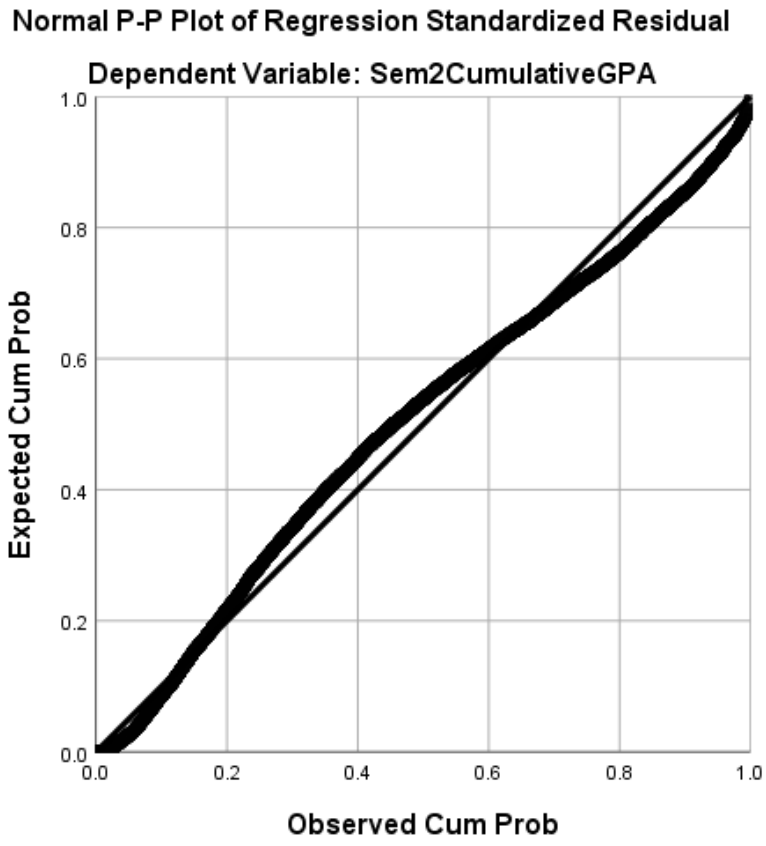


Cook's distance was used to ensure outliers were not having undue influence on the results. Tabachnick and Fidell (2013) suggested values bigger than one could be problematic within the analysis. Cook's distance ranged from 0.000 to 0.012 within Model Two, remaining

lower than one, further reassuring that the assumption of normality was met. Additionally, the Normal P-P Plot of Regression in Figure 2 shows the normality of Model Two.

Figure 2

Model Two P-P Plot of Regression



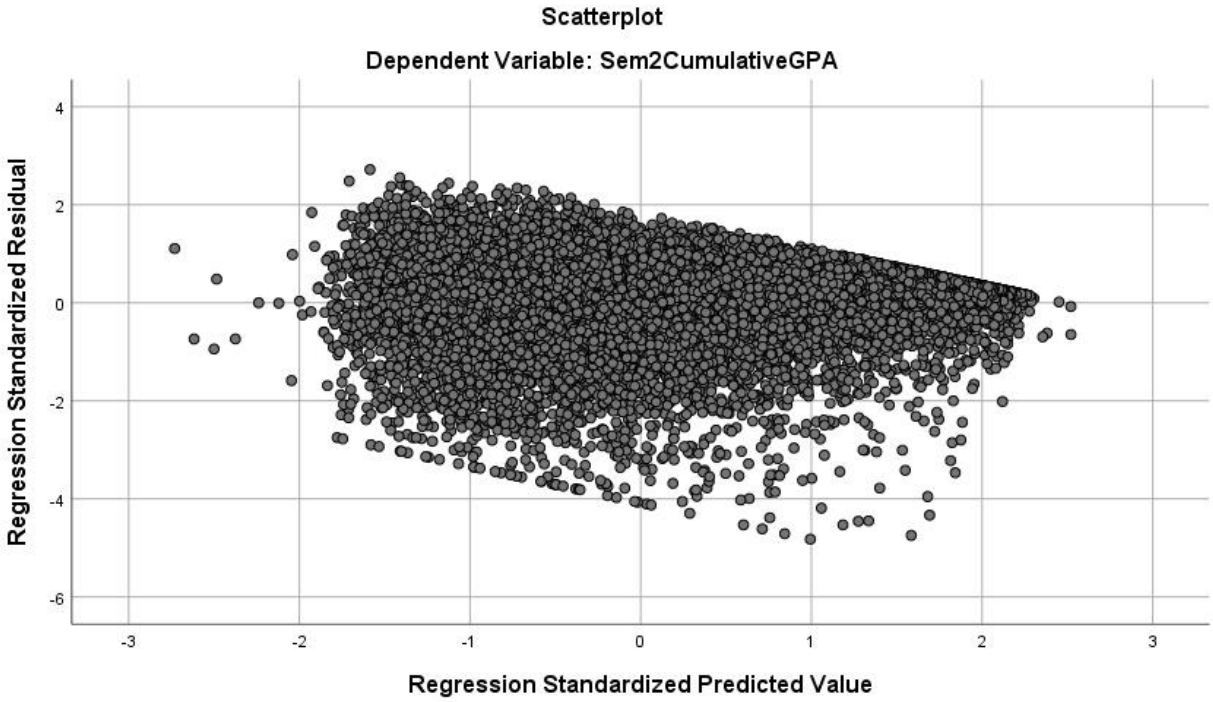
Linearity

To test for linearity, the plot of residuals was reviewed to ensure the majority of residuals were within plus and minus two on both axes to verify linearity between the linear composite of predictors and the criterion. Figure 3 shows the residuuals plotted with the majority lying between -2 and 2.

Figure 3

Model Two Scatterplot

Mean of Residuals



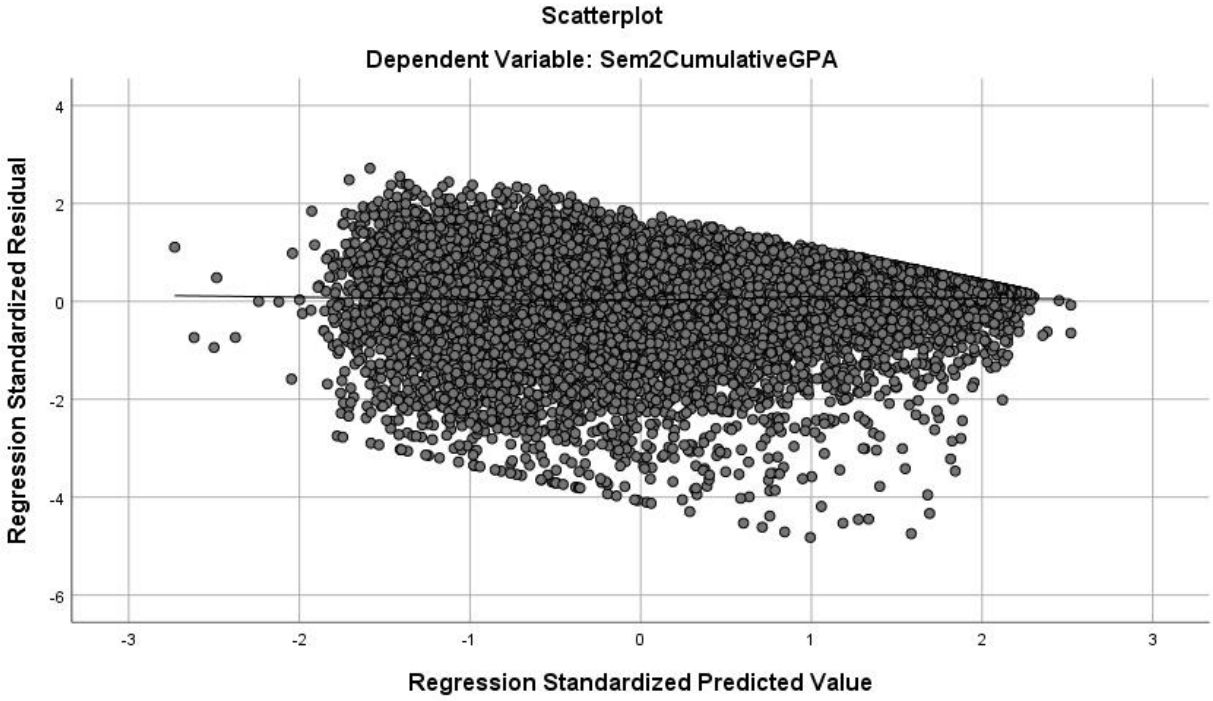
Additionally, the mean of residuals should be approximately zero, creating the shape of a rectangle around zero. The scatterplot for Model Two is shown in Figure 3. The Model Two scatterplot showed the means of residuals focused around zero, meeting this assumption.

Homoscedasticity and Heteroscedasticity

Homoscedasticity of residuals is an assumption that equal variance exists. Similar to assessing for linearity, a plot showing the fitted residuals can test for heteroscedasticity. The same scatterplot from Figure 3 was used with the addition of the Loess curve modeled on it for further inspection. The Loess Curve can be seen for Model Two in Figure 4.

Figure 4

Model Two Scatterplot with Loess Curve



Upon visual inspection, the relationship of standardized predicted values to residuals remained close to zero, showing minimal heteroscedasticity and meeting this assumption. The Loess curve on Model Two is at or slightly above zero all the way across.

Multicollinearity

As discussed previously, there were no predictor variables with a VIF at or above 5, nor were there any with tolerance levels above 0.1. Upon further inspection via a multiple regression utilizing the stepwise model, the variables for first semester cumulative GPA explained a great deal of the variance within the model indicating multicollinearity. Sem1Cumulative GPA was removed in the final model and not analyzed. The remaining variables and the analysis of Model Two showed no signs of multicollinearity.

Overfitting

Overfitting can reduce the ability to generalize the model. To prevent overfitting, variables with less than 15 observations were excluded prior to the first model. Additionally, the minimum sample size needed was 374 students and 11,255 were included in the final analysis. Finally, the R^2 and R^2 adjusted statistics were compared to ensure they were not vastly different. R^2 was .359 and the adjusted R^2 was .358 satisfying the assumption that overfitting did not occur.

Multiple Regression Model Summary

The multiple regression model developed to predict second semester cumulative GPA controlling certain demographic and academic variables was statistically significant ($p < .005$). The model also held students' enrollment in the FYE curriculum constant. Of note related to the purpose of this study, the variables representing students who enrolled in an FYS or LC or both were not significant contributors to the model. The best predictors of second semester cumulative GPA via their beta scores, however, were students' high school GPA and socioeconomic status.

Results for Hypotheses

The following hypotheses were included in Chapter 3 to provide directional hypotheses for each research question:

1. It is hypothesized that the measures of control will predict a statistically significant portion of the variance in second semester GPA.

The regression model was significant ($F[17, 10937] = 360.2$, $p < .05$, $R^2 = .359$) and explained 36% of the variance in second semester GPA.

2. It is hypothesized that high school GPA will be the best predictor of second semester GPA.

High school GPA was found to be a statistically significant predictor within the model and had the highest standardized beta value of all the variables at $\beta = 0.519$, $p = .001$.

Summary

The regression model developed to predict students' academic success in higher education showed gender, Pell eligibility, some racial identities, SAT scores, high school GPA, living on campus, and admission type to be significant factors predicting second semester GPA. The model controlled for enrollment in the FYE curriculum to help determine whether this intervening curriculum had an impact on student success. Despite the variables listed prior being significant contributors, the variables related to FYE enrollment did not rise to the level of statistical significance for this study at $p < 0.05$. However, the results of this predictive model offered suggestions into how other predictive factors could play a role in combination with the curriculum. A discussion of the results along with implications for future research is discussed in Chapter 5.

CHAPTER 5

DISCUSSION

Within this chapter, the two research questions presented within this study are summarized. The results of the study along with the hypotheses are synthesized through the lens of contributing to the literature on the impact of FYE on student persistence and retention. Additionally, the limitations and implications of the study, along with suggestions on further research are provided. Ultimately, the evidence discovered on the effectiveness of FYE curriculum in combination with demographic and academic factors is presented.

Students' transition from secondary to higher education is a tumultuous time. Traditional students going to college are leaving familiar communities and traditions and entering a new setting with new people, new rites of passage, new terminology, and a new way of studying. The first semester and first year within higher education are the most difficult time for students entering higher education, making them a population at risk of not being retained (Barefoot, 2000; Jamelske, 2009).

Many researchers have studied, analyzed, and created models on student retention. Tinto's theory of student departure (1975, 1993), Bean's (1980) student attrition model, and Kuh et al.'s (2008) high impact practices all served as underpinnings to the purpose and design of this study.

Because of the concern over retention and the utilization of the theories by Tinto (1975), Bean (1980) and Kuh et al. (2008), several interventions have been developed over time to ease the transition, build academic skills, and connect first year students better to their new community. Multiple interventions are often combined as part of an overall FYE. Two of the most common FYE elements include FYS and LC, generating the foundation for this study.

This study looked to determine the success of two FYE-related interventions, namely FYS and LC. Success was defined here as increased second semester GPAs coinciding with participation in the FYE interventions, while considering several other factors related to student success, including their academic preparation both before and during the first semester of college, as well as several demographic criteria such as race, age, and gender. These data were all analyzed through a quantitative analysis using multiple regression. A dataset spanning five years was provided by the institution where the study was conducted.

Discussion of Research Findings

Hypothesis 1 predicted that gender, age, socioeconomic status, race/ethnicity, standardized test scores, high school GPA, admission status, FYE enrollment, and first semester cumulative GPA would be significant in predicting second semester cumulative GPA. Using a multiple regression model, this study found gender, Pell eligibility, standardized test scores, high school GPA, admission type, and residence all contributed statistically significantly to the overall model predicting second semester GPA. Enrollment in the FYE programs, however, did not contribute significantly to the model. The overall hypothesis as stated was accepted, but first semester cumulative GPA was removed before running this model given concerns of multicollinearity.

The three variables with the biggest beta values that were all significant at $p < .005$ were high school GPA ($\beta = 0.519$), students who identified as Black ($\beta = -0.120$) and students who were Pell eligible ($\beta = 0.112$). Pell eligibility was used to help assess the impact of socioeconomic status on student success. Interestingly, the value for Pell showed students who were eligible for Pell (a socioeconomic status that signified a greater need for financial assistance) were predicted to earn higher GPAs than those who were not eligible. This finding could indicate that additional support for these students had a significant and positive impact for students with greater financial need. Additionally, gender was a significant predictor ($\beta = -0.056$, $p < .005$) within the model. This impact on the model showed identifying as female was a predictor of an increased second semester GPA, and conversely that identifying as male predicted a lower second semester GPA.

On the cusp of statistical significance within this study was participation in an LC ($\beta = 0.015$, $p < 0.10$). Even though this study utilized a 95% confidence level, it was interesting to note that participation in an LC only was significant at the 90% confidence level. In comparison, participation in a FYS only and participation in both a FYS and LC were not significant at the 90% confidence level. This finding indicated LCs might have more of an impact on students' GPAs than the other interventions (for example, participation in only an FYS) given the positive beta value. Given findings within other studies, the result that LCs did not contribute significantly to the model was surprising. Peters and Stearns (2003) found better academic outcomes for students who participated in LCs. Many researchers found several positive outcomes for students participating in LCs, including better critical thinking, increased engagement, and a better outlook on the college experience (Kuh, 2005; Soria & Taylor, 2016).

Even though the FYE interventions were not found to be statistically significant within this study, the predictive model developed did provide valuable information around general student success. The significant variables with negative beta values could become an area of increased or redirected focus including male students and students identifying as Black, LatinX, or multiracial. Finally, living on campus also resulted in a negative beta value, which is contrary to several studies on student success and GPAs for students living on campus.

Hypothesis 2 predicted that high school GPA would be the best predictor of second semester GPA. This hypothesis was accepted as it was a statistically significant contributor to the model and had the highest beta value ($b = 0.519$, $p < .005$). This result could be valuable to several constituencies at the institution including those determining admission criteria, as well as those identifying specific demographics of students for regular and conditional admissions and those developing bridge and general student success programs.

Looking at the bigger picture and considering the multiple regression model, it was evident that both demographics and academic preparation played important roles in the potential success, retention, and persistence of students. The nuances of the student population and the design of the interventions likely are pivotal in determining how important each factor is in predicting the success of students participating in the given intervention.

Limitations

Like any research study, this one was not without its limitations. First, as has been the case with many of the studies reviewed within the literature, this study occurred using data from a single institution. Despite qualifying the institution as Midwestern, public, and mid-sized, great caution should be used when generalizing the results as institutional demographic differences,

since approach and utilization of FYE can differ greatly. The nuanced differences among these can impact the results greatly.

Another limitation included the number of predictive variables considered. The intent was to look at as much data within the SIS as possible for this quantitative study, but the number of variables was found to complicate and dilute the usefulness of the multiple regression. Using more variables segmented the population being studied, making some of the variables too small to study. Even though the dataset was large and covered an entire population given a specific timeframe, once the population was broken down some variables could not be reviewed.

Within the literature, there were several studies that recommended utilizing mixed methods. This study was quantitative in nature, excluding direct student input into the impact of various variables on their ability to be retained or earn higher GPAs. Although utilizing a quantitative method can be a powerful direct measure, several factors influence a student's ability and decision to stay enrolled. A sense of belonging has been shown time and time again to be an important factor in both the academic success of the student, as well as his/her decision to stay at a given institution (Clark & Cundiff, 2011; Madgett & Bélanger, 2008; Morrow & Ackermann, 2012). This study did not measure belongingness, even though it was an important goal of both FYE interventions studied—FYS and LCs.

Another limitation of the study were the varying types of FYS and LC offered by the institution. Some FYS were generic in nature, open to all students regardless of major or admission type; others were specific to the student's declared major, and some were for a specific demographic of student based on admission criteria. For instance, students who were conditionally admitted were enrolled in a specific FYS. Additionally, some students had the option to take an FYS, while others were required to take it as part of their curriculum. Although

this information was coded within the dataset, it was not studied because of concerns around consistency within the categories, as well as the number of students who fell into each category when disaggregated. This element is an important aspect to consider when generalizing the study as some institutions only have discipline-specific seminars or only general seminars and the type of FYE could matter greatly regarding the impact on student success.

Similarly, different types of LCs were offered and they were tracked differently throughout the timespan covered. With the assistance of the institution, the courses were coded as LCs based on their connection to other courses within the system. Although the corequisites considered were confirmed to be part of an LC, the intentionality behind the differing LCs could be vastly different. For example, some instructors may have had regular conversations and intentionally coordinated and planned between multiple courses, whereas others may not have aligned at all and simply relied on the communal aspect of students taking more than one course together to be beneficial. Next, LLCs have been found to be effective interventions when students live and attend class together; however, the data for students enrolled in an LLC were not collected systematically and could not be utilized for this study. Although nuances within institutions and their FYE experiences created a limitation on the generalizability of the study, the results did expose statistical differences among students based on a broad background of demographic data, which can be utilized when considering the return on investment for programmatic interventions at a public Midwestern institution.

Finally, the research questions considered were a limitation as well as they looked to determine which students performed better based on given criteria and controls, while utilizing predictive statistical methodology. Using multiple regression created predictive models allowing for conclusions to be drawn, but the purpose of the study was not to pinpoint specific students

who earned higher GPAs. Instead the model generated a general prediction of which students would earn higher GPAs within the same criteria. The study created a statistically significant model to help faculty and staff at the institution predict which students would earn higher GPAs if the variables within the models were applied, but it may not help faculty or staff identify specific students in the future who may need additional or particular interventions to succeed.

Despite the listed limitations, many of the results of this study aligned with findings from previous studies, while adding to the research. Future research questions have emerged from the design and results of this study, as well as implications for practice in better retaining students, especially those most vulnerable and susceptible to the drastic changes that occur within the first year of transition to higher education.

Implications for Practice

*******This study has implications for institutions that utilize FYE as interventions for first-year students, especially the institution used in this study. Curriculum development, as early as Bobbitt's (1941) "The Good Life" theory, supported the need for a general education where students learn within a variety of fields, while also learning how to learn better. FYE oftentimes is geared toward these objectives. Students entering college experience several transitions, but one of great significance is that of dependence to independence. Knowles' (1980a) theory of adult learning is a primary tenet in how these students are taught, but also what they are taught. Kolb's (2015) focus on experiential learning also can play a significant role in the importance of FYE curriculum's impact on student retention. Understanding where students are and how they learn is critical in developing appropriate FYS and LC curriculum. These theories and frameworks supported the model of the study, but it must be noted that the specific FYE

interventions implemented at any given institution may differ and that these interventions are oftentimes developed to respond to that institution's specific demographic.

The study conducted here will contribute to the literature by providing additional nuances when considering the impact and effectiveness of FYS and LC. Results often differ within the literature given the context of the institution, as well as not including all the factors that impact student retention. Although no study can include all the factors that relate to a student's ability or decision to be retained at an institution, this study considered both demographic background as well as academic preparation in a standardized approach. This study will allow those developing and refining the FYE to better focus efforts on the students who may be more greatly impacted by participation in one or more of the elements. The results of this study also will help decision-makers determine the best organizational, structural, and financial approach to FYE. For instance, the students who did not participate in either FYE component yet earned higher GPAs may not find these specific interventions as valuable, allowing curriculum designers to focus attention more intentionally on demographics who were impacted more greatly. At the same time, caution should be used to not intentionally exclude the students who were successful within this study.

Future Research

Given the limitations of the study, as well as the implications for practice, several opportunities for future research have arisen. A longitudinal study that follows these cohorts of students through to graduation would be beneficial. As mentioned within the limitations, a mixed-methods approach in studying these cohorts over time would provide a more comprehensive view into the benefits of participating in FYE as well. Gaining insight into

students' perspectives on the impact of the FYE curriculum on their success could help to focus in on what is beneficial and what is not, while balancing the static data within the SIS.

Next, it would be beneficial to broaden the study to a larger population with multiple institutions that have similar FYE interventions as well. This approach could help minimize the variance across FYS and LC types and take a more general view of students who participate in FYE-related interventions. To get at the variance across FYE types though, future research should take an in-depth analysis into all the different ways in which institutions approach both FYS and LCs and their impact on student success. This research could consider whether it is beneficial to have a centralized approach to the curriculum, a hybrid model, or one that's owned by academic colleges, for instance. Additionally, the pedagogy and andragogy could be examined to determine who is best to teach the courses and the curriculum and pedagogies that should be applied.

Given the ability to accurately study students who were enrolled in both a FYS and LC, it would be beneficial for future researchers to consider the impact of enrollment in multiple FYE components or high-impact practices and whether the number of curricula interventions have exponential effects on student success or not.

Conclusion

This study aimed at better understanding the impact of two interventions related to the FYE at a mid-sized, public institution located in the Midwest. Retention from first to second year in higher education is a common source of anxiety for administrators as well as the public in considering the success of higher education as well as its value for students. Because of the concerns about retaining first year students, multiple interventions have been implemented over the past three decades, generally referred to as the First Year Experience. FYE has multiple

components used independently or in coordination with others, resulting in mixed success across the U.S. The institution studied used FYS and LCs as interventions within the first semester of college to help improve student success through their sense of connection to the institution and their academic success through raising GPAs. The study conducted was a quantitative analysis that used nine overarching predictor variables on the impact of second semester GPA based on participation in the two interventions described—FYS and LCs. Within this study, FYS were explained as credit-bearing courses that gathered first-year students in small cohorts to increase student engagement and retention within the institution, through earning an increased GPA (Kuh et al., 2013). LCs were described as "clusters of courses organized around a curricular theme that students take as a group" (Laufgraben, 2005,p. 371).

Two research questions were considered and answered by the results of the study. The research questions looked at the success of students enrolled in the institution's FYE programs—a FYS only, or a LC only—and how that enrollment impacted the students' GPA. The model developed was statistically significant, but enrollment in FYE was not a significant contributor to the model. Despite these results, valuable information was determined in how FYE could be approached moving forward, especially for specific groups of students.

Students who were admitted with regular admission, identified as female, were Pell eligible, and had higher high school GPAs and standardized test scores were predicted to earn higher second semester cumulative GPAs. This study showed that a different approach to FYE may be needed for students who identify as male and non-White, especially black or multiracial, as they were not as successful as their White, female counterparts.

Despite caution around generalizability of the study, the results are beneficial to the institution in consideration as well as other institutions that employ FYE-related interventions.

The analyses conducted showed variables that significantly contributed to a student's likelihood of being retained, albeit through different methods. The study showed that academic performance within the first semester is critical to future success, but also that students should have a solid academic background coming into the institution. Potentially more important than the study's findings and variable found to be significant in predicting success are those variables that are missing. As referred to earlier, the demographics and qualities of students that did not show up within the models as statistically significant can help inform how to approach FYE moving forward.

REFERENCES

ACT. (2016). *National collegiate retention and persistence-to-degree rates*. https://www.ruffalonl.com/documents/shared/Papers_and_Research/ACT_Data/ACT_2016.pdf

Advisory Committee on Student Financial Assistance. (2012). *Pathways to success: Integrating learning with life and work to increase national college completion*. https://files.eric.ed.gov/fulltext/ED529485.pdf

Altimare, E., & Sheridan, D. M. (2016). The role of non-classroom spaces in living-learning communities. *Journal of Learning Spaces, 5*(2), 1–14. https://files.eric.ed.gov/fulltext/EJ1152662.pdf

Astin, A. W. (1993). What matters in college? *Liberal Education, 79*(4), 4–15. http://search.epnet.com/login.aspx?direct=true&db=aph&an=9409260313

Astin, A. W., & Oseguera, L. (2005). Degree attainment rates at American colleges and universities (Rev. ed.). Higher Education Research Institute UCLA. https://www.heri.ucla.edu/PDFs/pubs/TFS/Special/Monographs/DegreeAttainmentRatesAtAmericanCollegesAndUniversities.pdf

At-risk definition. (2013, August 29). In *The Glossary of Education Reform*. https://www.edglossary.org/at-risk/

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Barefoot, B. O. (1992). Helping first-year college students climb the academic ladder: A report of a national survey of freshman seminar programming in American higher education. *W&M ScholarWorks*. https://dx.doi.org/doi:10.25774/w4-4p9k-8r77

Barefoot, B. O. (2000). The first-year experience. *About Campus, 4*(6), 12–18. https://doi.org/10.1177/108648220000400604

Barefoot, B. (2004). Higher education's revolving door: Confronting the problem of student drop out in U.S. colleges and universities. *Open Learning: The Journal of Open, Distance and E-Learning, 19*(1), 9–18. https://doi.org/10.1080/0268051042000177818

Barefoot, B. O., Griffin, B. Q., & Koch, A. K. (2012). *Enhancing student success and retention throughout undergraduate education: A national survey*. John N. Gardner Institute for Excellence in Undergraduate Education.

Bean, J. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education, 12,* 155–187. http://www.jstor.org/stable/40195329

Blackhurst, A. E., Akey, L. D., & Bobilya, A. J. (2003). A qualitative investigation of student outcomes in a residential learning community. *Journal of the First-Year Experience & Students in Transition, 15*(2), 35–39. http://www.ingentaconnect.com/contentone/fyesit/fyesit/2003/00000015/00000002/art00002

Bobbitt, J. F. (1941). *The curriculum of modern education*. The Maple Press Company.

Boeree, C. G. (2006). Albert Bandura, 1925-present. http://webspace.ship.edu/cgboer/bandura.html

Bruner, J. S. (1960). *The process of education*. Harvard University Press.

Burrus, J., Elliott, D., Brenneman, M., Markle, R., Carney, L., Moore, G., Betancourt, A., Jackson, T., Robbins, S., Kyllonen, P., & Roberts, R. D. (2013). *Putting and keeping students on track: Toward a comprehensive model of College persistence and goal attainment* (Rep. No. ETS RR-13-14). Educational Testing Service.

Carlson, S. (2020, February 1). The Oddsmakers of the College Deathwatch. *Chronicle of Higher Education*. https://www.chronicle.com/article/The-Oddsmakers-of-the-College/247947

Clark, M. H., & Cundiff, N. L. (2011). Assessing the effectiveness of a college freshman seminar using propensity score adjustments. *Research in Higher Education, 52,* 616–639. https://doi.org/10.1007/s11162-010-9208-x

Connolly, S., Flynn, E. E., Jemmott, J., & Oestreicher, E. (2013). First year experience for at-risk college students. *College Student Journal, 51*(1), 1–6. https://search-ebscohost-com.proxy.ulib.uits.iu.edu/login.aspx?direct=true&db=s3h&AN=121530608&site=eds-live

Crook, C., & Mitchell, G. (2012). Ambience in social learning: Student engagement with new designs for learning spaces. *Cambridge Journal of Education, 42*(2), 121–139. https://doi.org/10.1080/0305764X.2012.676627

DeAngelo, L. (2014). Programs and practices that retain students from the first to second year: Results from a national study. *New Directions for Institutional Research, 160,* 53–75, https://doi.org/10.1002/ir.20061

Eck, J. C., Edge, H., & Stephenson, K. (2007). Investigating types of student engagement through living-learning communities: The perspective from Rollins College. *Assessment Update, 19*(3), 6–8. https://doi.org/10.1002/au.193

Frey, B. B. (2015). *There's a stat for that!: What to do and when to do it*. SAGE Publications.

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. https://www.aacu.org/publications-research/periodicals/first-year-seminars-increase-persistence-and-retention-summary

Greenfield, G. M., Keup, J., & Gardner, J. N. (2013). *Developing and sustaining successful first-year programs: A guide for practitioners*. https://ebookcentral.proquest.com/lib/insu-ebooks/detail.action?docID=861636

Hammond, C., Linton, D., Smink, J., & Drew, S. (2007). *Dropout risk factors and exemplary programs*. National Dropout Prevention Center.

Higher Education Compliance Alliance. (2019). *Compliance Matrix*. Retrieved May 25, 2020, from https://www.higheredcompliance.org/compliance-matrix/

Horton, J. (2015). Identifying at-risk factors that affect college student success. *International Journal of Process Education*, *7*(1), 83–102. http://www.ijpe.online/2015/risk.pdf

Huff, M. T., & Burek, M. W. (2016). Enhancing student persistence and freshmen-to-sophomore retention through a college-level first-year seminar. *Department Chair*, *27*(1), 18–20. https://doi.org/10.1002/dch.30094

IBM Corp. (2017). IBM SPSS Statistics for Windows, Version 25.0. IBM Corp.

Inkelas, K. K., Vogt, K. E., Longerbeam, S. D., Owen, J. E., & Johnson, D. R. (2006). Measuring outcomes of living-learning programs: Examining college environments and student learning and development. *Journal of General Education*, *55*(1), 40–76. http://www.jstor.org/stable/27798036

Institution University. (2018). Enrollment summary Fall 2018. http://irt2.xxx.edu/cms7/ir/assets/File/es_f18.pdf

Jamelske, E. (2009). Measuring the impact of a university first-year experience program on student GPA and retention. *Higher Education, 57*, 373–391. http://www.jstor.org/stable/40269128

Keup, J. R., & Skipper, T. L. (2014). How "HIP" is your first-year seminar? [PowerPoint slides]. https://sc.edu/nrc/system/pub_files/1549307057_0.pdf

Knowles, M. (1980a). Malcolm Knowles on . . . "How do you get people to be self-directed learners?" *Training and Development Journal, 34*(5), 96–99. https://eds-b-ebscohost-com.proxy.ulib.uits.iu.edu/eds/pdfviewer/pdfviewer?vid=1&sid=73510626-8fb8-456a-959f-163f93484bbd%40pdc-v-sessmgr05

Knowles, M. (1980b). *The modern practice of adult education from pedagogy to andragogy: Revised and updated*. Follett Publishing Company.

Kolb, D. A. (2015). *Experiential learning: Experience as the source of learning and development* (2nd ed.). Pearson Education.

Kuh, G. D. (2005). Student engagement in the first year of college. In M. L. Upcraft, J. N. Gardner, & B. O. Barefoot (Eds), *Challenging and supporting the first-year student: A handbook for improving the first year of college* (pp. 86–107). Jossey-Bass.

Kuh, G. D., O'Donnell, K., & Reed, S. (2013). *Ensuring quality & taking high-impact practices to scale.* Association of American Colleges and Universities.

Kuh, G. D., Schneider, C. G., & Association of American Colleges and Universities. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. Association of American Colleges and Universities.

Laufgraben, J. L. (2005). Learning communities. In M. L. Upcraft, J. N. Gardner, B. O. Barefoot, & Associates, *Challenging and supporting the first-year student: A handbook for improving the first year of college* (pp. 371–387). Jossey-Bass.

Madgett, P. J., & Bélanger, C. H. (2008). First university experience and student retention factors. *Canadian Journal of Higher Education*, *38*(3), 77–96. https://journals.sfu.ca/cjhe/index.php/cjhe

Mayhew, M. J., Rockenbach, A. N., Bowman, N. A., Seifert, T. A., Wolniak, G. C., Pascarella, E. T., & Terenzini, P. T. (2016). *How college affects students* (Vol. 3). Jossey-Bass.

Mitchell, M., Leachman, M., & Saenz, M. (2019). State higher education funding cuts have pushed costs to students, worsened inequality. *Center for Budget and Policy Priorities*. https://www.cbpp.org/research/state-budget-and-tax/state-higher-education-funding-cuts-have-pushed-costs-to-students

Morrow, J. A., & Ackermann, M. E. (2012). Intention to persist and retention of first-year students: The importance of motivation and sense of belonging. *College Student Journal*, *46*, 483-491. https://www.projectinnovation.com/college-student-journal.html

National Resource Center. (n.d.). About the center. http://sc.edu/fye/center/index.html

National Resource Center. (2013). *2012-2013 National survey of first-year seminars*. http://sc.edu/fye/research/surveys/survey_instruments/pdf/Executive_Summaries_2013_National_Survey_FirstYearSeminars.pdf

National Resource Center. (2017). Assessment resources. http://sc.edu/fye/resources/assessment/index.html

National Student Clearinghouse Research Center. (2016, May 03). Snapshot Report–Persistence and Retention. https://nscresearchcenter.org/snapshotreport-persistenceretention22/

Pallant, J. (2013). *SPSS survival manual* (5th ed). Open University Press.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students*. Jossey-Bass.

Patton, L. D., Renn, K. A., Guido-DiBrito, F., & Quaye, S. J. (2016). *Student development in college: Theory, research, and practice*. Jossey-bass. Retrieved from https://ebookcentral.proquest.com

Peters, J. R., & Stearns, D. E. (2003). Bringing educational relevancy to the first-year college experience by bearing witness to social problems. *The Journal of Experiential Education, 25*, 332–342. https://doi.org/10.1177/105382590302500307

Porter, S., & Swing, R. (2006). Understanding how first-year seminars affect persistence. *Research in Higher Education, 47,* 89–109. http://www.jstor.org/stable/40185885

Schrader, P. G., & Brown, S. W. (2008). Evaluating the first year experience: Students' knowledge, attitudes, and behaviors. *Journal of Advanced Academics, 19,* 310–343. https://doi.org/10.4219/jaa-2008-775

Schubert, W. H. (1993). Curriculum reform. In G. Cawelti (Ed.), *Challenges and achievements of American education: 1993 yearbook of the Association for Supervision and Curriculum Development*. Association for Supervision and Curriculum Development.

Shushok, F., & Sriram, R. (2010). Exploring the effect of a residential academic affairs-student affairs partnership: The first year of an engineering and computer science living–learning center. *The Journal of College and University Student Housing, 36*(2), 68–81. https://www.acuho-i.org/journal?portalid=0

Sommers, B. J. (1997). The freshman year experience and geography: Linking student retention and the introductory geography curriculum. *Journal of Geography, 96,* 243–249. https://doi.org/10.1080/00221349708978798.

Soria, K. M., & Taylor, L. (2016). Strengths-based approaches in college and university student housing: Implications for first-year students' retention and engagement. *The Journal of College and University Student Housing, 42*(2), 60–75. http://www.nxtbook.com/nxtbooks/acuho/journal_vol42no2/index.php#/0

Stassen, M. L. (2003). Student outcomes: The impact of varying living–learning community models. *Research in Higher Education, 44,* 581–613. https://doi.org/10.1023/A:1025495309569

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson Education.

The Trends Report 2020. (2020, February 16). *Chronicle of Higher Education*. https://www.chronicle.com/interactives/021620-thethrendsreport2020

Tierney, W. G. (1992). An anthropological analysis of student participation in college. *Journal of Higher Education, 63,* 603–618. https://doi.org/10.2307/1982046

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45,* 89–125. https://doi.org/10.3102/00346543045001089

Tinto, V. (1988). Stages of student departure: Reflections on the longitudinal character of student leaving. *The Journal of Higher Education, 50,* 438–455. https://doi.org/10.2307/1981920

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