FIRST-YEAR SEMINAR COURSE AND ACADEMIC PERFORMANCE: AN EXAMINATION OF DIFFERENCES BY STUDENT CHARACTERISTICS

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by

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DEDICATION

With love and gratitude, I dedicate this work to my family. My educational success would not have been possible without your love and support. To my Dad, thank you for modeling the value of an education and instilling a standard of lifelong excellence. To my husband Bill, thank you for your encouragement to begin this process and your support in completing it. I also dedicate this dissertation to my children, Elizabeth, Joseph, and Jennifer. I appreciate your patience and understanding from the beginning to the end of this journey. I love you all.

ABSTRACT

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Purpose

The purpose of this study was to investigate the extent to which the relationship between (a) student demographic variables (i.e., ethnicity, gender, first generation status, low income), college admission variables (i.e., admission status, SAT/ACT scores, remediation requirements), and (b) GPA and retention was influenced by first-year seminar (FYS) course participation at one Tier II doctoral university in the southwestern United States.

Method

To examine differences among students who took the FYS and students who did not take the FYS among specific student variable groups an explanatory, quantitative, non-experimental, cross-sectional research study was conducted. Institutional data for the entering first-time first-year class of 2014 at one 4-year university were examined. Six research questions were constructed to examine the differences in GPA outcomes and FYS course participation by student variable group using six separate two-way ANOVAs. In cases where data were non-normal, a Kruskal-Wallis was presented for comparison. If there was heterogeneity of variance, a Welch test was presented for comparison. Six additional research questions were constructed to examine the differences in one-year retention and FYS course participation using a chi-squared statistical test of independence.

Findings

For ANOVA results that compared GPA outcomes and the statistical interactions with the FYS course, several student groups had statistically significantly higher GPAs when compared to their peers in the same student group who did not take the FYS course: Black, Hispanic, at-risk (development education), first-generation, and low-income (Pell Grant recipients). For chi-squared statistical results comparing student variables and one-year retention outcomes, male students, students reporting as not first-generation status, and students who did not receive the Pell Grant (low-income status) had statistically significantly higher retention rates if they took the FYS course. Although statistical significant was present within several variable groups who took the FYS, small effect sizes were also present in each finding indicating negligible practical significance. Implications for practitioners and researchers are discussed in the context of Tinto's (1975) theory of student departure and Astin's (1984) theory of student development theory.

KEY WORDS: First-year seminar, GPA, Retention, Student success, Ethnicity, Gender, First-generation, Low-income, Admission status, At-risk

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CHAPTER I

Introduction

Background of the Study

A heightened environment of accountability exists for student success in higher education to meet the future U.S. skilled workforce demands (Askin, 2007; Buddin, 2012; Carnevale, Rose, & Strohl, 2014; D'Amico, Katsinas, & Friedel, 2012). During a State of the Union Address, President Barack Obama posited that for the United States to be a leader in the future, educators must focus on college access and completion, and further, that the U.S. economy will depend on the strength of an educated citizenry (Remarks by the President in State of Union Address, 2011). As the ever-expanding global economy continues to produce progressively competitive labor markets with a demand for new skills, postsecondary education attainment rates will inform the educational capacity of individuals, and therefore, of nations (Western Interstate Commission of Higher Education, 2012). Furthermore, the benefits of earning a bachelor's degree extend beyond economics to the quality of life for the educated person's family, for their communities, and for future generations of their families (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008).

Students with higher ACT or SAT scores and high school rankings perform better in college (Porter & Swing, 2006), but students are arriving to college in need of academic interventions (Bettinger, Boatman, & Long, 2013), and strive to find new social connections in transitioning into the college culture (Stovall, 2000). A staggering number, almost half, of students who enter 4-year universities leave before completing a bachelor's degree (Kuh et al., 2008). Moreover, historically underrepresented student

enrollment has increased, yet the degree completion rates for these students is lower compared with their non-minority peers (Kuh et al., 2008). Approximately 29% of first-year students at 4-year public colleges must enroll in remedial classes (Bettinger et al., 2013; Martorell & McFarlin, 2011; U.S. Department of Education, 2014) and students enrolling in remedial classes tend to drop out of college more frequently than students who do not take remedial courses (Venezia, Kirst, & Antonio, 2003). Financially at-risk students (e.g., students from low socioeconomic backgrounds) have traditionally had less postsecondary success than other students (Buddin, 2012; Rendón, Jalomo, & Nora, 2004). Students without postsecondary educational attainment will more often experience higher unemployment rates and lower wages than students who complete a postsecondary degree (Buddin, 2012).

The research topic of this study was the first-year seminar course and first-year student success in college. First-year seminar courses, sometimes referred to as freshman seminars or college success courses, are one of the most frequently used, and therefore, most frequently assessed college success interventions (Kuh, 2008; Padgett, Keup, & Pascarella, 2013; Upcraft, Gardener, & Barefoot, 2005). University administrators, researchers, and legislators value first-year student retention and first-year GPA as appropriate intermediate milestones of timely degree completion (Offenstein, & Shulock, 2010). Therefore, student retention and GPA have been widely collected and reported to (a) improve student time-to-degree completion, (b) reduce student debt, (c) initiate and monitor student success initiatives, and (d) improve funding opportunities from the state by reaching performance goals (Bruininks, Keeney, & Thorp, 2010; Tinto, 2006; Upcraft et al., 2005). As such, retention and GPA are components of the larger definition of

student success specifically during the first-year of college. Upcraft et al. (2005) defined how student success is measured in the first-year of college.

> Intellectual and academic competence [is measured] in three ways; (1) successful completion of courses with an acceptable grade point average, (2) continued enrollment to the second-year, and (3) development of higher order intellectual skills necessary to become an educated person, such as critical thinking, problem-solving, and reflective judgment. (pp. 27-28)

Many independent variables influencing first-year student retention and GPA outcomes have been identified. Student demographic variables such as gender, ethnicity, academic unpreparedness, financially at-risk status, and first-generation status have been studied (Astin, 1984; Kuh et al., 2008; Tinto, 2012). Indicators of preadmission academic achievement used by college admissions departments to assess college readiness, such as high school class rank, high school GPA, participation in dual-credit and advanced placement courses in high school, and SAT/ACT scores have been used to predict college success (Barnes, Slate, & Rojas-LeBouef, 2010; Combs et al., 2010; Conley, 2008). High impact student experiences (interventions) in the first-year of college, such as participation in a first-year seminar, have been the focus of some studies and are implemented to improve student success in college (Kuh, 2008; Kuh et al., 2008). Individual or single institution studies have been criticized for providing a lack of generalizable findings (Jamelske, 2009; Porter & Swing, 2006); however, evaluation of the outcomes of single-institution intervention programs that include differing levels of pre-college academic achievement are designed to inform improvement of institution-specific student success initiatives (Bruininks et al., 2010; Skipper, 2016). Furthermore,

examining results of well-designed single institution studies helps to clarify comparisons of the uniqueness of the students, the institutional culture, and the characteristics of first-year seminars in the literature (Skipper, 2016).

Statement of the Problem

Factors that influence first-year students' college success have been the subject of much educational research (e.g., Bruininks et al., 2010; Combs et al., 2010; Kuh, 2008; Kuh et al., 2008; Lumina Foundation, 2014; Stovall, 2000; Tinto, 1975, 1982, 2006; 2012; Williford, Chapman, & Kahrig, 2001; Yamamura, Martinez, & Saenz, 2010). Contemporary issues that concern decision makers in higher education are: access, affordability, admissions decisions, reduction of federal and state dollars to subsidize higher education, and higher expectations for completion rates. These concerns have intensified the scrutiny of the cost of attendance related to the benefit afforded with the completion of a college degree (Bruininks et al., 2010; Eagan, Lozano, Hurtado, & Case, 2013). The Lumina Foundation (2014), an independent private organization, publishes an annual report entitled, *A Stronger Nation through Higher Education,* that tracks college degree attainment focusing mainly on the percentage of the nation's population between the ages 25 to 64 holding 2- or 4-year college degrees (Lumina Foundation, 2014). According to the most recent national data available for 2012, 39.4% of working-age Americans had a 2- or 4-year degree, an increase of 0.7%, from the prior years' reported rate of 38.7%. Texas falls below the national average with degree attainment at 34.6%, an increase of only 0.1% from the prior year (Lumina Foundation, 2014). According to reports from the U.S. Census Bureau (2014), the estimated breakdown of the levels of education for 16.4 million Texas residents ages of 25 and over were: (a) 9.1% held

graduate or professional degrees; (b) 17.9% had completed bachelor's degrees; (c) 6.6% reported having associate's degrees; (d) 22.7% reported having some college experience, but no degree; (e) 25.2% had attained only a high school (or equivalency) diploma; and (f) 18.5% had less than a high school diploma (U.S. Census Bureau, 2014).

College and university administrators are increasingly asked to re-examine first-year-of-college programs that provide success in connecting students to the college culture (Strahan & Credé, 2015) by increasing critical thinking and academic success and improving retention and timely graduation (Mlynarczyk & Babbitt, 2002; Tinto, 2006, 2012). Seminal first-year researchers noted a strong positive relationship between participation in a first-year seminar and persistence to a second-year of college (Upcraft et al., 2005). First-year seminars have been used as an intervention in higher education for more than 30 years (Upcraft et al., 2005), and, as the seminar design evolves to meet diverse college student interests and needs, they are offered more frequently with diverse themes (Permzadian & Credé, 2016; Young & Hopp, 2014). Kuh (2008) identified first-year seminars as one of several high impact practices for improved retention and first-year GPA. High-impact practices have been identified in the literature as: (a) first-year seminars; (b) common intellectual experiences (e.g., common courses, common readings, integrative assignments); (c) learning communities (e.g. taking the same classes with a small cohort of students); (d) writing-intensive courses; (e) collaborative assignments, (f) undergraduate research; (g) cultural/diversity experiences; (h) service learning; (i) internships; and (j) a senior capstone course or project (Kuh, 2008). Further, Kuh (2008) recommended that college students should experience at least one first-year high-impact

practice, and then, at least one other high-impact practice while pursuing a bachelor's degree.

Williford et al. (2001) reported a dearth of studies, in which prior academic performances and multiple performance indicators (e.g., student demographics, college admissions variables), were simultaneously used to understand the relationship between a first-year seminar course and subsequent retention and GPA. This information may reveal variability among students with multiple success and/or risk factors in relationship to first-year of college support strategies (MacKinnon, Fairchild, & Fritz, 2007; Williford et al., 2001).

Purpose of the Study

The purpose of this study was to investigate the extent to which the relationship between (a) student demographic variables (i.e., ethnicity, gender, first generation status, low-income), college admission variables (i.e., admission status, SAT/ACT scores, remediation requirements), and (b) GPA and retention was influenced by first-year seminar course participation at one Tier II doctoral university in the southwestern United States (U.S. News and World Report, 2012). Drawing from the recent research literature, the goal was to design and conduct a non-experimental quantitative, cross-sectional study to identify and test the relationship between students who took the FYS and those who did not with regard to GPA and one-year retention differences by student demographic characteristics (i.e., gender, ethnicity, first-generation, and low income), college admissions (readiness) variables (i.e., variables of SAT/ACT scores, admissions status, and remediation requirements). Specifically, the study examined students across three different ethnic groups, Black, Hispanic, and White students, and included multiple pre-

enrollment characteristics. This approach was intended to improve upon previous research that sought to understand the differences in student success outcomes for those who participated in first-year seminars. Moreover, it was hypothesized that this study would provide information to practitioners and scholars who implement and measure outcomes of first-year seminars in educational research.

Educational Significance of the Study

The importance of measuring student success in college has grown, as the number of U.S. students age 16-24 enrolled in 4-year colleges right after high school, had slightly increased from 41.4% in 2010 to 43.7% in 2014 (NCES, 2015). The overall national enrollment for students attending any college immediately after high school graduation (i.e., 2-year public, 4-year public, and 4-year private) had slightly increased from 68.1% in 2010 to 68.4% in 2014 (NCES, 2015). Further, nationally, students who started college in 2014 returned to any college for a second-year at a rate of 72.1%, and the percent who returned to the same institution was 60.6% (National Clearinghouse Research Center, 2016). This one-year retention statistic represented a 2.1% increase compared with the 2010 entering class. More specific to this study, the class of 2014 enrolling at 4-year public institutions in the U.S. were retained at any 4-year public institution at a one-year retention rate of 82.3%, and at the same institution at 70.2% (National Clearinghouse Research Center, 2016). Caution was exercised when comparing retention and degree completion rates across institutions because in a recent study for a sample of 60 4-year colleges and universities, researchers discovered that postsecondary institutions had large variability in 6-year degree completion rates (e.g., 17% - 79%) and in admissions

requirements (ACT, 2013a), thus detailed research at the individual institutional level was needed to clarify comparisons.

As the Texas college student population increasingly diversified (ACT 2014b; Lumina Foundation, 2014), college readiness indicators established by ACT have increased from 22% of college-ready students in 2009 to 26% being college-ready in the 2014 high school graduating class (ACT, 2014b). Low-income students (i.e., those who reported annual incomes of less than $36,000), and first-generation students (i.e., those who reported that neither parent had any postsecondary education) who graduated from high school in 2014 were among the lowest group attending postsecondary education in the fall of that same year (ACT, 2014c).

Educators must continually examine the implementation and the results of intervention programs designed to assist students with timely degree completion (Kuh et al., 2008; Tinto, 2012). College-readiness (or lack thereof) can often predict student success in college level academic work (Tinto, 2006), and enrollment administrators rely on pre-entry ACT and SAT scores to make admissions decisions. Once admitted, higher education faculty and administrators invest in programs and practices that are focused on the impact that a positive first-year experience plays in determining student success in college (Tinto 1975, 1982, 2006, 2012). In a report from ACT (2013b) examining factors influencing degree completion based on 126,000 ACT-tested students who enrolled in 60 4-year postsecondary institutions in fall 2000 through fall 2003, first-year college GPA had a much larger direct effect than did ACT scores or high school GPAs on 6-year degree completion (ACT, 2013b). Additionally, student decisions to return to the same institution after the first-year of college were influenced by financial factors, emotional

factors, the student-faculty relationship experience, the social interactions, and the academic learning and assessment experience (e.g., Kuh et al., 2008; McInnis, 2001; Tinto, 2006; Yorke & Thomas, 2003). Student retention to the second-year and persistence to graduation have become the assessment of accountability for institutions of higher education (Permzadian & Credé, 2016; Upcraft et al., 2005).

Students and taxpayers ultimately share in the expense of university programs. Therefore, it is important to assess and improve program outcomes while keeping costs to a minimum. Students come to the university with different levels of academic skills and experience. A range of different situations affect retention. Valid methods of comparison must be developed to accurately evaluate program outcomes (Hagedorn, 2005; Mackinnon et al., 2007). Retention is an important milestone for students and for the university because it is a predictor of persistence to graduation. College graduation is the mission and purpose of higher education and often serves as the report card of success for the institution (Jamelske, 2009). Students who do not graduate are not as likely to earn their highest potential (Jamelske, 2009). Although some students leave because of reasons beyond institutional control, studying the pre-college factors together with the student demographic variables and the impact of college intervention strategies with appropriate statistical methods, may reveal outcomes that provide new perspectives for institutional policy decisions aimed at the reduction of student attrition (Kuh, 2008; Tinto, 2012).

Theoretical Framework

Tinto (1975) identified contributing factors of family background, individual student characteristics, social constructs (e.g., social status, values, expectations), and

pre-college learning experiences as factors predicting student persistence in higher education. Foundational to Tinto's (1975) theory of student departure was the recognition that although students experienced similar situations in college, they perceived them differently, due to differing individual student characteristics. These differences may influence the variability of student resilience to overcome or to succumb to obstacles present in the college transition experience. Moreover, Tinto (1975) explained that student commitment to personal goals and to persistence at the institution were influenced by the degree of integration and the positive social interactions with faculty and peers, in addition to student academic success.

Milem and Berger (1997) suggested that Tinto's (1975) departure theory was like Astin's student development theory. Astin (1984) developed the I-E-O model (Inputs, Environment, and Outputs); a student development theory to study how student inputs (e.g. background characterizes) interact with the college environment (student involvement in academics and in social activities) to produce desired outputs (persistence and academic success). Astin (1984) posited that intentionality in the construction of campus culture and educational policy are directly related to student involvement, and therefore, to student success. In transitioning to college, first-year students strive to find a sense of belonging and often have doubts about the potential to succeed academically and socially in the college environment (Yeager & Walton, 2011). First-year seminar (FYS) course curriculum is commonly designed to support academic skills, to assist students in research-based exploration of educational and career goals, and to improve social integration into the campus culture (Kuh et al., 2008, Tinto, 2012; Young & Hopp, 2014).

Research Questions

The following research questions were investigated in this study:

1. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by gender?
2. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by ethnicity?
3. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by at-risk status?
4. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by first-generation status?
5. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by low-income status?
6. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by admittance status?
7. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by gender?
8. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by ethnicity?
9. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by at-risk status?
10. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by first-generation status?

11. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by socioeconomic status?

12. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by admittance status?

Definition of Terms

The definition of operational terms used in this dissertation were as follows:

Admit (Admittance) type. In response to college applicants, admissions officials accepted students according to pre-determined college-specific admissions standards (e.g., SAT/ACT scores, high school class rank). Students were further classified by pre-college academic characteristics, such as prior completion of dual credit or advanced placement courses, classification of at-risk status, due to financial aid eligibility, SAT/ACT scores, or high school class rank. According to the Texas Higher Education Coordinating Board (THECB, 2012), "the act of responding to and classifying students by pre-college attributes is an action taken by the institution in response to the student's application for admission" (p. 2). In this study, the terms *admit type* and *admissions status* were used interchangeably.

Black or African American. When students self-reported an ethnic affiliation of Black, it was defined as "a person having origins in any of the black racial groups of Africa" (THECB, 2012, p. 8).

Census date. This study used enrollment and retention data reported on the official census date of each fall semester. The census date is defined as, "the official day of record that public higher education institutions must determine the enrollments that

qualify to be reported to the Coordinating Board for state reimbursement" (THECB, 2012, p. 16).

College readiness. Students considered prepared for success in college have developed skill sets in "creativity, critical thinking, self-efficacy, and self-regulation," (Barnes et al., 2010, p. 2). Additionally, Lombardi, Seburn, and Conley (2011) defined college-readiness as, the skills necessary for students to successfully complete college coursework "without remediation" (p. 375).

Developmental education (remediation). According to the THECB (2012), "developmental education was defined as courses, tutorials, laboratories, or other efforts to bring students' skill levels in reading, writing, and mathematics to entering college level" (p. 26). The at-risk status variable in this study was defined as those students who were required to take a non-credit bearing required developmental education class in English or mathematics during the year of the study.

Economically disadvantaged. The THECB allowed state colleges some discretion in defining and reporting the economically disadvantaged status, thus careful disaggregation of data and clarity of the definition was necessary. The THECB (2012) allowed colleges to:

> Use one or more of the following standards to determine whether an individual is economically disadvantaged: 1) annual income at or below the federal poverty line, 2) eligibility for Aid to Families with Dependent Children or other public assistance programs (includes WIC program participants), 3) receipt of a Pell Grant or comparable state program of need-based financial assistance, 4) participation or eligible for JTPA programs included under Title II, and 5) eligible

> for benefits under the Food Stamp Act of 1977 or the Health and Humans Services (HHS) Poverty Guidelines, 403.114, page 36721 of final Rules and Regulations. (p. 28)

For purposes of this study, data were disaggregated so that the low-income variable was identified and designated if a student was eligible for a grant under the Federal Pell Grant program.

First-year seminar course. The definition of a first-year seminar course varied among institutions, but generally the course supported the integration of academic skills and personal or life skills. First-year seminar courses are designed to assist with transitional skills, and for students to examine learning strategies and life skills to remain academically and emotionally viable in the college environment (Friedman & Alexander, 2006). At the institution under study, the 3-credit-hour first-year seminar course curriculum incorporated practices as discussed by Young and Hopp (2014): (a) critical thinking; (b) exploration of personal strengths as they related to the selection of college major and minor fields of study; (c) academic degree exploration and planning; (d) career exploration connected to major and minor fields of study; (e) out-of-class campus social and academic activities; (f) learning strategies; and (g) service learning.

Admissions decisions. During the time period data were collected, the 2014 college admissions standards for the university in this study included: (a) automatic admission of students ranked in the top 25% of their high school class regardless of SAT or ACT scores; (b) admission of students in the second high school class ranking quartile who attained a SAT score (critical reading plus mathematics) of at least 960 or an ACT score of 20; and (c) admission of students in the third high school class ranking quartile

who attained an SAT score (critical reading plus mathematics) of at least 1060 or an ACT score of 23.

Admission decisions were based on a seven-semester high school transcript with information on class rank and SAT or ACT scores. An applicant denied admission to the university, due to not meeting acceptance standards, could appeal in writing to the admissions officers for reconsideration. Students were reconsidered for conditional admittance if they delivered a personal statement that addressed academic goals and achievements for college success, and if they agreed to enroll in and successfully complete the university first-year seminar course during the first semester.

Race/Ethnicity. According to the American Association of Collegiate Registrars and Admissions Officers (AACRAO, 2012), college applications typically request that applicants provide a self-report of race/ethnicity. Students are asked to select one (race-affiliation) from a list of categories to which students personally identify, for example, one of the following race affiliations: (a) American Indian or Alaska Native; (b) Asian; (c) Black or African American; (d) Hispanic or Latino; (e) Native Hawaiian or Other Pacific Islander; or (f) White (AACRAO, 2012).

First-generation college student. For purposes of this study, a first-generation college student was defined as "a student who is the first member of his or her immediate family to attend a college or university; neither of his or her biological or adoptive parents have ever attended a college or university" (THECB, 2012, p. 32).

First-time freshmen (FTF). Students were coded as first-time freshmen if college enrollment occurred in the fall semester of the same year as high school graduation occurred. According to the THECB (2012), "students who entered with

college credit earned before high school graduation or who enrolled in the summer after high school graduation are also considered first-time freshmen in the fall term immediately following high school graduation" (p. 32).

Full-time student. Students enrolled in 12 or more semester credit-hours were considered full-time students (THECB, 2012). These designations are most commonly used to track eligibility for financial aid, to predict retention, and time to graduation outcomes.

Hispanic/Latino. When students self-reported an ethnic affiliation of Hispanic or Latino, it was defined as "an ethnic origin of a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race" (AACRAO, 2012, para. 4).

Overall GPA. The Glossary of Education Reform (2013) defined the overall grade point average (GPA) as "a number representing the average value of the accumulated final grades earned in courses over time" (para. 1). For institutional reporting purposes, the overall GPA was calculated after completion of the fall and spring semesters based on all undergraduate level courses completed.

Retention. Retention can be confused with the term *retained* in K-12 education (THECB, 2012). In the literature regarding institutions of higher education, retention was referred to as the rate at which students return to fall of the second-year of college at the same institution. Retention in this study was, therefore, a benchmark for student success and persistence to graduation (Tinto, 1997). According to the THECB (2012), "the cohort generally consists of students who started in a fall term or in the previous summer term and who continued in the next fall term" (p. 53). Hagedorn (2005) identified several

definitions of retention and specifically delineated that "institutional retention is the measure of the proportion of students who remain enrolled at the *same* institution from year to year" (p. 15).

SAT. Used in college admissions decisions as a predictor of college success, the THECB definition for the SAT is "an examination administered by the Educational Testing Service and used to predict the facility with which an individual will progress in learning college level academic subjects" (THECB, 2012, p. 55). Formerly referred to as the SAT I, the SAT examination measures "student reasoning based on knowledge and skills developed by the students in their course work" (College Board, 2014e, p. 2).

White. When students self-reported an ethnic affiliation of White, it was defined as "a race of a person having origins in any of the original peoples of Europe, the Middle East or North Africa" (THECB, 2012, p. 68).

Limitations

Onwuegbuzie (2003) noted that quasi-experimental study results in the field of education have multiple threats to internal and external validity. External threats in population validity, the extent to which findings from one study are generalizable to a larger population, are possible regarding the sample of the 2014 entering class of first-year students at one university. Additionally, ecological validity (i.e., the unique variances in the student sample about academic college readiness, ethnic, and socioeconomic composition of one cohort of first-year college students) can also be a threat to the generalizability across institutions and across specific student subgroups. Due to differences in varying college admissions requirements and student college readiness indicators, findings from this study may not be generalized to other university cohorts with dissimilar student populations. Furthermore, first-year seminar courses are

common first-year college experiences encountered at various colleges and universities with differences in the number of course contact hours, in course content, in instructor teaching pedagogies, in students who take the courses, and in the university policies that govern them (Young & Hopp, 2014).

To minimize threats to external validity, due to the use of a criterion-based sample, this study described with specificity multiple pre-college descriptive statistics and academic characteristics of the student sample. Specifically, characteristics of the 2014 first-time freshman in this study were compared with the national and state characteristics of the 2014 high school graduates who entered college in the fall of 2014. Wilkinson and the Task Force on Statistical Inference (1999) stated that "sometimes the case for the representativeness of a convenience sample can be strengthened by explicit comparison of sample characteristics with those of a defined population across a wide range of variables" (p. 595).

The first-year seminar courses under study may have presented a threat to internal validity, in that, implementation bias may occur as the student experience and resulting outcomes may be influenced differently in sections of the first-year seminar course, due to differences in instructor teaching. Course selection, instructor experience, and differences in the extent to which the first-year seminar course objectives were taught by various instructors, along with student initial commitment to college success (Astin, 1984; Tinto, 2012) may alter student outcomes (Onwuegbuzie, 2003). Furthermore, this study addressed only one intervention variable (a first-year seminar course) that colleges and universities implement with an explicit objective to increase retention and GPA (Upcraft et al., 2005); when in fact, any given student may have experienced several

intentional experiences not measured in the study, but that are also designed to increase student success. Further, caution should be exercised in interpreting the results of this study because inherent in the complexity of student departure decisions, is that, not all factors can be identified; and thus, an exhaustive list of variables have not been included. Finally, valid results require that correct predictor variables were chosen and further that the relationship between the variables being considered was correctly interpreted (Thompson, 2006). To mitigate this threat, the researcher drew from the literature to inform which predictor variables were most likely to influence the outcomes.

Delimitations

This study was delimited to the examination of retention and GPA outcomes during one academic year for first-time first-year students enrolled in the 2014-2015 academic year at a Tier II University (U.S. News and World Report, 2012). Data were delimited to first-year GPA scores and retention to second-year at one 4-year university, as reported by the university institutional research office. A further delimitation was a focus on the GPA and retention differences among three ethnic groups (e.g., Black, Hispanic, and White). Student-outcome measures were studied through the lens of only one intervention, the first-year seminar course.

Assumptions

The first assumption in this study was that ACT and SAT examination scores reported by the College Board were accurate. The second assumption is that students accurately reported their ethnicity and gender when applying to college. A final assumption was that the student financial information, the admissions information, and

the retention and the GPA scores, as reported by the university institutional research department, were accurate.

Summary

Drawing from recent research literature, the goal of this study was to identify and test the relationship between (a) student demographic characteristics (i.e., gender, ethnicity, first-generation, and low-income) and college admission (readiness) variables (i.e., SAT/ACT scores, admissions status, and remediation requirements), and (b) students' academic success (first-year GPA) and retention as they may relate to participation in a 3-credit-hour, first-year seminar course during the fall semester of the first-year of college. Specifically, the current research focus was to examine the extent to which participation in a first-year seminar influenced the relationship between (a) student demographic characteristics and college admission variables, and (b) GPA and retention to a second-year of college at one university.

Organization of the Study

This dissertation is comprised of five chapters. Chapter I includes the introduction, background of the study, statement of the problem, purpose of the study, educational significance of the study, theoretical framework, research questions, definition of terms, limitations, delimitations, assumptions, and a summary. Chapter II is a review of the literature relevant to key elements of the study. Chapter III describes the research design and method to be used, and includes the sampling and participant selection, the characteristics and context of the first-year seminar course, the data source, data analysis, and a summary. Chapter IV details the results of 12 research questions examined in the study. Also included were data analysis procedures, participant

demographics, and a summary. Chapter V contains a summary of the study results and connection of the results to the literature and theoretical frameworks. Implications for policy and practice, future research suggestions, and a conclusion is also included.

CHAPTER II

Review of the Literature

Introduction

The search for relevant data sources began by conducting key word searches in Google Scholar, the EBSCO Host library databases, including: Academic Search Complete; Education Full Text (H.W. Wilson); Education Source; Educational Administration Abstracts; ERIC; and PsycINFO. ProQuest databases were also accessed for recent dissertations on this study topic. Search strategies for first-year seminar studies focused on recent peer-reviewed articles, defined as published within the last 10 years (January 2005 to December 2015), and recent dissertations, defined as published from January 2013 through January 2016. Specifically, keyword searches for first-year seminars were as follows: *first-year seminar course (not community college); college survival course; college success course; first-year orientation; orientation seminar; transition course; college transition seminar; University 101; University 1301; high impact practices; retention;* and *first-year GPA.*

Additionally, reference sections from obtained peer-reviewed articles and recent dissertations were examined for relevance to the research questions. Furthermore, as prominent scholars who focused on student success in the first-year of college emerged in the literature, their work was more closely scrutinized for relevant topics. Articles were chosen if they provided historical context to first-year of college interventions or declared the study of first-year seminars as an intervention for variables related this study.

College Readiness

The student sample in this study was the entering first-time freshman class of 2014; and thus, the college-readiness indicators for the high school graduating class of 2014 are relevant to this study. Moreover, the college entrance examination scores for the 2014 SAT or ACT test were included as participant variables in the study model. These examinations were taken by participants at any time during their high school years, including the summer prior to the fall 2014 semester. To better understand the context of study participant examination scores and how they co-varied within their peer groups, a discussion of the SAT/ACT benchmark scores related to participant score achievement was important to compare regarding predictability of first-year retention and GPA results.

National benchmarks: ACT and SAT in 2014. Student academic readiness for college has been tested and analyzed by ACT since 1959 (ACT, 2014a). In 2014, 57% of all 2014 high school graduates in the United States took the ACT test. The Condition of College & Career Readiness 2014: National report (ACT 2014a) defined college-readiness based on benchmarks designed to predict the high school class of 2014 student success in first-year college courses. Specifically, the benchmarks were "the minimum scores needed on the ACT subject area tests to indicate a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in subject area credit-bearing first-year college courses" (ACT, 2014a, p. 16). The data from the four subject area benchmarks revealed that (a) 64% of the 2014 graduates were deemed college-ready (i.e., an ACT examination score minimum of 18) in English, (b) 44% met the reading benchmark score of 22 or higher, (c) 43% met the minimum mathematics benchmark

score of 22, (d) 37% met the science benchmark score of 23, and (e) 26% of the ACT-tested 2014 high school graduates met all four subject area benchmarks (ACT, 2014a).

In the 2014 College Board Program Results: SAT (College Board, 2014a), the national 2014 benchmarked test scores revealed that 42.6% of the graduating high school class of 2014 who took the SAT were rated as college-ready; a number that has remained approximately the same for the last 6 years (College Board, 2014a). Underrepresented students such as African American SAT test takers met the benchmark scores at a rate of 15.8% and Hispanic students at a rate of 23.4%. The College Board (2014a) predicted a 65% or better probability of students achieving a first-year GPA of a B- (i.e., a 2.66 GPA) or higher with a minimum combined benchmark score (critical reading, mathematics, and writing) of 1550. Nationally, 78% of students meeting or exceeding the 1550 benchmark enrolled in a 4-year university, and of those students, 54% were predicted to complete a bachelor's degree in 4 years. Only 46% of those SAT test takers not meeting the SAT benchmark enrolled in a 4-year university, with a prediction that 27% would complete a bachelor's degree within 4 years (College Board, 2014a).

Texas benchmarks: ACT and SAT in 2014. Approximately 40% (or 116,547 students) of the 2014 Texas high school graduating class took the ACT examination (ACT, 2014b). Although a smaller percentage took the test in Texas, Texas students performed at similar levels to the national score, with slightly lower English and reading scores and a higher mathematics score (ACT, 2014b). Texas students who completed a college preparatory core curriculum class in high school, met the ACT benchmarks at higher rates than those students who chose to take less than the college preparatory curriculum, "which means that 4,917 more students could have benefited from more

rigorous coursework, presenting a real opportunity for improvement in college and career readiness" (ACT, 2014b, p. 3).

In 2014, 179,036 students took the SAT in Texas, and 61.2% of SAT test-takers were minority students (College Board, 2014b). The Texas 2014 SAT examination mean scores were: 476 (*SD* = 113) compared to 497 nationally in critical reading; 495 (*SD* = 110) compared to 513 nationally in mathematics; and 461 (*SD* = 108) compared to 487 nationally in writing mean scores (College Board, 2014d). Data comparisons for Texas revealed that overall 33.9% of Texas students met the SAT benchmark (College Board, 2014b). However, only 14.0% of Texas African American SAT test-takers met the benchmark, and 18.9% of Texas Hispanic SAT test-takers met the benchmark (College Board, 2014b). The gap in test scores between African American, Hispanic, and White students spanned all subject areas of both the ACT (ACT, 2014b) and SAT tests (College Board, 2014b) for the 2014 test takers.

Trends in Higher Education in the United States

Historically, education statistics reveal that the largest student attrition rates occur between the first and second-year of college (e.g., ACT, 2011; DeAngelo, 2014; Tinto 1993). According to National Student Clearinghouse Research Center (2016), the 2014 national first-year retention rate for fall semester first-time freshman (full-time and part-time) to the next fall semester census date of college for public 4-year institutions was 82.3% nationally for those returning to any college in 2015, and 70.2% returned to the same institution in 2015. Full-time students were retained at higher rates (88.2%) than part-time students (62.8%). These retention rates represent a 2.1 percentage point increase from the 2010 cohort (National Student Clearinghouse Research Center, 2016).

Research that measures changes in college student characteristics and changes in career profiles can inform institutions of higher education on retention and graduation efforts (Eagan et al., 2013; Massey, Charles, Lundy, & Fischer, 2003). In an annual analysis of first-year college students, the Cooperative Institutional Research Program (CIRP) American Freshman Survey profiled the national norms of fall 2014 entering freshman (Eagan et al., 2014). Researchers estimated that more than 1.6 million first-time, full-time students enrolled at 1,583 4-year institutions of higher education in the fall of 2014 (Eagan et al., 2014). Of those, there were 153,015 first-time, full-time students surveyed by CIRP who entered 227 four-year U.S. colleges and universities in 2014. Researchers found substantial differences in the national profile of the 2014 first-year students in the United States. Students in this survey reported substantially less identification with any religion, less use of alcohol or tobacco, more interest in attending graduate school, and they reported more emotional health concerns. Moreover, students attending less selective colleges indicated they were more likely to transfer and needed more time to complete a degree (Eagan et al., 2014).

To further understand the recent profile of U.S. students entering college, the 2013 CIRP survey results were also examined for recent trends. Student survey results in the 2013 (CIRP) American Freshman Survey revealed that the percentage of students submitting applications to more than three colleges increased significantly from 44.5% in 2008 to 55% in 2013 (Eagan et al., 2013). The number of students enrolling at their first-choice institution had decreased, and was at its lowest point since the CIRP survey began in 1974. More than 25% of students surveyed in the 2013 study reported cost as the major factor for not attending their first choice because they were not offered enough aid by

their first-choice campus (Eagan et al., 2013). Further findings indicated that 53.9% of first-generation students indicated that the cost of attendance at their current institution was an important factor in their enrollment decision (Eagan et al., 2013).

More students reported coming from increasingly diverse high school and neighborhood populations, and these different experiences and skills emerged in college classrooms (Eagan et al., 2013). Additionally, first-year students expressed that they had the "ability to work cooperatively with others and to tolerate others of different beliefs; however, first-year students scored themselves lowest on their openness to having their own views challenged" (Eagan et al., 2013, p. 13). Eagan et al. (2013) recommended that faculty and staff needed to be attentive to new student perspectives, and described how they could move students from their embedded worldviews to new educationally expanded experiences and views. When asked about career aspirations, new freshman reported the field of business as their number one career path after graduation (13%); medical doctor, surgeon, dentist, or orthodontist weighed in as their second choice (11%); and health care support careers ranked third (9.2%, Eagan et al., 2013).

Student achievement: Underrepresented student populations. The civil rights movement of the 1960s resulted in intentional recruitment of historically underrepresented students, and more specifically, African American and Latino students, to address past exclusionary policies in higher education (Massey et al., 2003). More recently, due to immigration from Asia and Latin America and the resulting changes in the U.S. demographic landscape, the attention to student body diversity in higher education's recruitment policy was fueled by the desire to represent and reflect the general population (Massey et al., 2003). Despite increased participation of

underrepresented students in higher education, achievement gaps in college success have remained (College Board, 2014b; Massey et al., 2003). In 2015, approximately 33% of the U.S. population, age 25 or older, held bachelor's degrees. Asian and White populations held more bachelor's degrees (53.9% and 36.2% respectively) than did Black (22.5%) or Hispanic (15.5%) populations (Ryan & Bauman, 2016). Wong and Nicotera (2004), and Coleman et al. (2010) noted a strong connection between lower student academic performance in underrepresented Black and Latino high school students when associated with segregated neighborhood schools, low parent education, and low parent income.

Degree attainment in Texas and the U.S. The attainment of a bachelor's degree or higher among Texans age 25 or older was 27.0%, and attainment of any postsecondary credential was 33.6% (U.S. Census Bureau, 2014). As illustrated in Table 1, when compared to the U.S. Census Bureau (2014) figures, national average (i.e., from population estimates of 209,056,129), educational attainment results for postsecondary degrees, a need for improvement in Texas is presented (population estimates 16,426,730). Given the changing demographics of Texas, along with an increase in the economically disadvantaged population, institutions of higher education are called on by Texas legislators to create more opportunities for access and success in earning postsecondary credentials for students from traditionally underrepresented backgrounds (THECB, 2015).

Table 1

2015 Educational Attainment Comparison: U.S. versus Texas (Age 25 or older)

Education level	U.S. (%)	Texas (%)
Less than 9th grade	5.8	9.3
9th-12th, no diploma	7.8	9.6
High school diploma	28.0	25.2
Some college, no degree	21.2	22.7
Associates degree	7.9	6.6
Bachelor's degree	18.3	17.9
Graduate/professional degree	11.0	9.7

Note. Data comparisons compiled from the U.S. Census Bureau (2015). Educational Attainment: 2010-2014 American Community Survey 5-Year Estimates data tables.

Socioeconomic impact on college readiness. Only students who complete the FAFSA and are from low SES families are eligible for the Federal Pell Grant (U.S. Department of Education, 2015). University financial aid officers use information reported on the Free Application for Federal Student Aid (FAFSA), and students can receive these grant funds from only one institution at a time. Federal Pell Grants are awarded based on (a) how much a student's family can contribute annually to the costs of college (EFC), (b) the actual cost of attendance at the college, (c) whether the student is enrolled part-time or full-time (at least 12 hours), and (d) whether the student attends classes for a full academic year or less (U.S. Department of Education, 2014). Unfortunately, Federal Pell Grant amounts awarded to individual students only covers an average of 30% of tuition, fees, room, and board (Perna, 2015). Federal TRIO programs designed for first-generation low-income students can also help students, but there are not enough programs to bring the equity of financial access needed to low-income students

(Perna, 2015). The Federal Pell Grant eligibility was used as an indicator for low Socioeconomic Status (SES), identified as the low-income variable in this study. It should be noted that some students may not have completed the FAFSA and would have been eligible for the Pell Grant had they done so.

THECB: Texas Higher Education 60X30 Strategic Plan

Recently, the Texas legislators and the THECB introduced new goals for institutions of higher education in Texas. Goals outlined in the *Texas Higher Education 60X30 Strategic Plan* (THECB, 2015) are to: (a) have at least 60% of the Texas population ages 25-34 have a postsecondary credential by 2030 (including those who migrate to the state with these credentials); (b) have at least 550,000 graduates of all ages complete a postsecondary credential from a Texas higher education institution in the year 2030; (c) have institutions make clear throughout the college curriculum and students explicitly be able to articulate identified marketable skills embedded in the curriculum and acquired during their time in college; and (d) have student loan debt be manageable and not exceed 60% of post-graduate first-year income (THECB, 2015). The plan was designed to specifically address the expected continued increase in the Texas population of traditionally underrepresented students in higher education. Projections for the population mix in Texas by 2030 are 11% African American, 52% Hispanic, 29% White, and 8% Other ethnicities (THECB, 2015).

In 2013, only 35% of Texans between the ages of 25 and 34 had earned a postsecondary credential. The Texas Higher Education Strategic Plan calls for institutions of higher education to become more innovative to realize the 60X30 goals. Educators will need to focus on expanded programs that target students who (a) require

developmental education, (b) qualify for competency based programs, (c) benefit from improved academic diagnostic assessments such as the Texas Success Initiative (which identifies specific gaps in English and mathematics competencies), (d) need strategies to reduce the time to completion of credentials, and (e) benefit from earning duel credit while still in high school (THECB, 2015).

Theoretical Framework

In exploring the variables for conceptualizing a theoretical model of dropout from college, Tinto (1975) identified contributing factors of family background, individual student characteristics, social constructs (e.g., social status, values, expectations), and pre-college learning experiences as factors predicting student persistence in higher education. Foundational to Tinto's (1975) theory of student departure was the recognition that, although students experienced similar situations in college, they perceived them differently, due to differing individual student characteristics. These differences impacted the variability of student resilience to overcome or to succumb to obstacles present in the college transition experience. Moreover, Tinto (1975) explained that student commitment to personal goals and to persistence at the institution were influenced by the degree of integration of positive social interactions with faculty and peers, and with academic success. Tinto (1975) suggested that longitudinal studies would be an appropriate method to evaluate student persistence patterns and to examine the effects of multiple student attributes on student persistence.

In 1982, Tinto noted a shift in the demographic profile of entering college students and cautioned that his early model did not account for the degree to which group-specific student attrition occurred (e.g., financial, gender, ethnicity, or social status

differences). He observed that students transitioning to college often perceived the experience of moving from a normed community to a temporarily normless community (i.e., unknown group norms and beliefs), as a catalyst for feelings of isolation that prompted decisions to leave school (Tinto, 1988). Specifically, Tinto (1993) identified three major reasons why students leave college: (a) academic difficulties; (b) lack of clear educational and career goals; and (c) a lack of social integration into the college culture. Tinto (1993) explained that students needed integration of academic performance, informal faculty interactions, extracurricular activities, and meaningful peer-group interactions to successfully navigate the college transition (Seidman, 1996).

Using a reduced path model with a longitudinal design, Pascarella and Terenzini (1983) tested Tinto's (1975) theory on the persistence of college freshman with 763 residential students over a 14-month period. Results were "consistent with theoretical expectations based on Tinto's conceptual model of the persistence/withdrawal process" (Pascarella & Terenzini, 1983, p. 224). Of note was the importance of academic and social integration, goal commitment, and institutional commitment acquired by students within the first-year of college, and the increased magnitude that social integration had on the persistence of women students (Pascarella & Terenzini, 1983).

In *Appraising Tinto's Theory of College Student Departure*, Braxton, Shaw Sullivan, and Johnson (1997) concluded that Tinto's (1975) theory was only partially relevant and lacked "empirical internal consistency" (p. 109). The 13 primary hypotheses extrapolated from Tinto's departure theory examined through the lens of different types of students in different social settings, across different types of colleges and social groups were:

1. Student entry characteristics affect the level of initial commitment to the institution.

2. Student entry characteristics affect the level of initial commitment to the goal of graduation from college.

3. Student entry characteristics directly affects the student's likelihood of persistence in college.

4. Initial commitment to the goal of graduation from college affects the level of academic integration.

5. Initial commitment to the goal of graduation from college affects the level of social integration.

6. Initial commitment to the institution affects the level of social integration.

7. Initial commitment to the institution affects the level of academic integration.

8. The greater the degree of academic integration, the greater the level of subsequent commitment to the goal of graduation from college.

9. The greater the degree of social integration, the greater the level of subsequent commitment to the institution.

10. The initial level of institutional commitment affects the subsequent level of institutional commitment.

11. The initial level of commitment to the goal of graduation from college affects the subsequent level of commitment of the goal of graduation from college,

12. The greater the level of subsequent commitment to the goal of graduation from college, the greater the likelihood of student persistence in college, and

13. The greater the level of subsequent commitment to the institution, the greater the likelihood of student persistence in college. (Braxton & Lee, 2005, p. 110)

Braxton et al. (1997) identified and tested these 13 hypotheses and suggested that, beginning students who had a strong commitment to the university or to graduation, continued to be more committed to persisting. Subsequently, Braxton and Lee (2005) sought to test the strength of empirical evidence supporting Tinto's (1975) theory by identifying peer-reviewed studies involving 4-year colleges and universities (residential and commuter) that tested one or more of the 13 identified hypotheses (Braxton et al., 1997), and that used "only tests conducted using such multivariate statistical procedures as path analysis with linear multiple regression, LISREL, multiple discriminate analysis or logistic regression" (Braxton & Lee, 2005, p. 111). Braxton and Lee (2005) used a delimiter of at least 10 multivariate studies to confirm empirical evidence of reliable knowledge for each proposition for each institutional type (i.e., 4-year residential and 4-year commuter institutions). Further, if at least seven of the 10 multivariate studies confirmed the hypothesis, it was deemed to be reliable knowledge by Braxton and Lee (2005).

Although several studies had confirming results when less than 10 studies were examined, none of the 13 hypotheses could be supported for 4-year commuter colleges, due to the lack of at least 10 studies analyzed with the required multivariate statistical procedures to support the reliable knowledge threshold. For studies involving 4-year residential colleges, seven of the 13 hypotheses (i.e., 2, 4, 5, 7, 8, 11, 12), could not be supported, due to the lack of at least 10 studies analyzed with the required multivariate statistical procedures to support or refute the hypotheses. In testing 6 hypotheses (i.e.,

Hypotheses 1, 3, 6, 9, 10, and 13), there were enough studies that met the delimiter of 10 multivariate studies.

Tinto's (1975) departure theory was upheld in three of the six hypotheses examined. For Hypothesis 9, studies indicated that the greater the degree of social integration observed, the greater the level of subsequent commitment to the institution was observed. For Hypothesis 10, the initial level of institutional commitment positively affected the subsequent level of institutional commitment. For Hypothesis 13, the greater the level of subsequent commitment to the institution occurred, the greater the likelihood of student persistence in college. Braxton and Lee (2005) concluded that additional tests of these hypotheses to meet the required multivariate statistical procedures could produce confirming reliable knowledge in those hypotheses not designated as such in their 2005 study. They recommended that residential colleges and universities provide first-year students with multiple opportunities to interact with other students, and to include mandatory orientation programs and requirements to reside in residence halls.

Astin (1984) developed a student involvement theory for college persistence that considered the impact of student time, effort, and motivation to complete a college degree. Astin (1984, 2012) asked that educators and administrators consider student time as a valuable finite resource when planning class schedules, academic probation, participation in special programs, course content, teaching techniques, books and other resources. In other words, the environment created by college personnel impacts what students spend time on and the amount of effort they devote to academics. Like Tinto's (1975) departure theory (Milem & Berger, 1997), Astin (1984) developed the I-E-O model; which includes, Inputs, Environment, and Outputs to study how student inputs

(e.g., background characteristics) interact with the college environment (e.g., student involvement in academics and in social activities), to produce desired outputs (e.g., persistence, academic success). Astin (1984) posited that intentionality in the construction of campus culture and educational policy are directly related to student involvement, and therefore, student success.

More recently, Tinto (2012) reviewed the literature for case studies that informed best practice for a variety of institutional interventions to improve retention and timely graduation. He cautioned administrators to focus on the larger goal of student learning. As such, he emphasized that the classroom is one of the most impactful places to nurture deep learning and a sense of community (Tinto, 1997, 2012). Notably, at 4-year institutions, student retention to a second-year was positively influenced by students' academic success and feelings of social belonging early in their college career (Astin 1984; Tinto, 1998, 2012). The first-year of college is a critical time to establish and nurture these goals (Tinto, 1998). Navigating the stages of separation, transition, and integration into a new environment is a universal human experience (Tinto, 2012). Within the context of diverse students entering unique institutional cultures, student departure and persistence theory is important in considering implementation and assessment of programs that make an impact, and in examining how these programs make a difference for specific populations (Astin, 1984, 2012; Tinto, 1998, 2012).

In transitioning to college, first-year students strive to find a sense of belonging and often have doubts about the potential to succeed academically and socially in the college environment (Yeager & Walton, 2011). The first-year seminar course curriculum is designed to address and support academic performance, to assist students in exploring

educational and career goals, and to improve student social integration into the campus culture (Kuh et al., 2008; Tinto, 2012; Young & Hopp, 2014). As such, additional individual university studies that analyze student intervention outcomes using complex multivariate statistical procedures are needed (Braxton & Lee, 2005).

Trending Characteristics of First-Year Seminars

There are variations among first-year seminar designs such as the number of credit-hours, the length of the course, the topics covered, who is required to take the course, and the course enrollment size (Barefoot, 1992; Young & Hopp, 2014). Overall the research literature illustrates that the purpose of these seminars is generally,

> To enhance the academic and/or social integration of first-year students by introducing them to (a) a variety of specific topics which vary by seminar type, (b) essential skills for college success, and (c) selected processes, the most common of which is the creation of a peer support group (Barefoot, 1992, p. 49).

The exploration of recent research examining first-year seminars may reveal if intended course outcomes are being realized (Jessup-Anger, 2011).

Researchers at The National Resource Center for The First-Year Experience and Students in Transition at the University of South Carolina reported that 89.7% of higher education institutions responding to the 2012-2013 National Survey of First-Year Seminars survey offered first-year seminars (Young & Hopp, 2014). This result makes the first-year seminar one of the most pervasive first-year interventions on the part of colleges and universities across the country (Keup & Barefoot, 2005). The National Survey of First-Year Seminars (NSFYS) is a survey conducted by The National Resource Center for The First-Year Experience and Students in Transition every 3 years to provide

a national overview of first-year seminar trends and characteristics. Institutions responding to the 2012-2013 National Survey of First-Year Seminars (i.e., 896 out of 3,753 public and private 2- and 4-year colleges and universities invited to participate) reported that the general definition of the first-year seminar was a course focused on enhancing first-year student academic and social integration into the college culture (Young & Hopp, 2014). Additionally, six first-year seminar types were identified building upon Barefoot's (1992) five freshman-seminar course types. In reporting results, Young and Hopp (2014) added a hybrid course type to describe first-year seminars when institutions reported combining two or more elements from other seminar types; and thus, not fitting the description of one of the original five categories (Barefoot, 1992). Institutions were asked to report all seminar types offered, and some institutions reported offering more than one type of seminar at the same institution. Specifically, Young and Hopp (2014) identified the following six seminar types, listed in order of most reported type of seminar to the least reported.

1. Extended orientation seminar. This type represented 60.4% and included content addressing "introduction to campus resources, time management, academic and career planning, learning strategies, and an introduction to student development issues" (Young & Hopp, 2014, p. 62).

2. Academic seminar with uniform content across sections. Representing 29.4% of first-year seminar types reported, this type is characterized by content that is themed by a discipline or special topic of interest (e.g., for business majors). Of special note, the content also frequently included academic skills content "such as critical thinking and expository writing" (Young & Hopp, 2014, p. 62).

3. Academic seminar with varied topics and content across sections. This seminar type was reported in 28.7% of the universities surveyed and is similar to academic seminar with uniform content across sections. It is differentiated, in that, academic topics are varied across course sections and are often unique based on faculty areas of interest (Young & Hopp, 2014).

4. Pre-professional or discipline-linked seminar courses are most often designed to prepare students for specific majors. Representing 16.4% of seminar types reported, such seminar topics might include pre-veterinary, pre-medical, pre-nursing, or pre-engineering (Young & Hopp, 2014).

5. Basic study skills seminar types are often designed for student who are less prepared than their peers for academic rigor. Representing 22.6% of seminar types reported, curriculum in these courses often included academic success strategies such as reading improvement, note-taking, time management, and test-taking skills (Young & Hopp, 2014).

6. Hybrid seminars, defined as seminars configured with two or more characteristics of the previously defined seminars accounted for 23.4% of seminar types reported. Due to institutions reporting several types of seminars offered at a single institution, these percentages add up to more than 100.0% (Young & Hopp, 2014).

Limitations of the 2013-2014 National Survey of First Year Seminars were (a) a 23.9% response rate, (b) 4-year institutions were overrepresented, and (c) a nationally disproportionate number of campuses (47.6%) with 1,000 or more students responded to the survey. Within the first-year seminar curriculum, Young and Hopp (2014) noted that the five most prevalent topics reported across the six seminar types were (a) study skills

(50.5%), (b) campus resources (47.9%), (c) academic planning and advisement (44.7%), (d) time management (33.5%), and (e) career exploration or preparation (29.3%).

Recent Literature on Effectiveness of First-Year Seminars

This section of the literature review is divided into two main sections: single-institution studies and multi-institution studies. Studies were included if information was published between 2005 and 2016 and measured any of the following: (a) outcome variables of GPA or one-year retention; (b) variables at 4-year colleges or universities; (c) differences between first-year seminar participants and nonparticipants; (d) sample populations of first-year students entering college in 1998 or later; or (e) retention measured from fall of the first semester of enrollment to fall of the second-year of enrollment for first-time freshman. First, the single institution studies are presented and then summarized in Table 2. Research articles for single institution studies meeting the study criteria was reviewed for comparison to the current single institution study outcomes and to inform the use of variables in the current study. Next, meta-analytic studies were summarized and compared to inform trends and reveal additional variables and outcomes.

Single Institution Studies. Cox, Schmitt, Bobrowski, & Graham (2005) conducted a study to examine the impact that a business, first-year seminar had on business students (n = 179) compared to their peers (n = 1,136 of other first-year students) entering college in the fall of 2001. Business majors were required to enroll in the course reportedly designed to improve academic skills, to foster a sense of belonging, and to define expectations and opportunities for students majoring in business. Additional variables in the study were high school GPA, SAT, college financial aid need, residential

versus commuter students and student demographics. Using a probit model and regression equations with a two-stage estimation process to control for potential sample selection biases, researchers predicted the probability of student success among students with varying similarities and differences. Results were that students in the business, first-year seminar had higher GPA and retention than their non-participating peers. Moreover, although the SAT mean was lower for the business students, they performed at higher levels than the nonparticipating peers (Cox et al., 2005).

Miller, Janz, and Chen (2007) conducted two studies to test (a) the retention comparisons for students of varying pre-college academic preparation, and (b) the retention impact considering first-year seminar participation and pre-college academic preparation. Participants were the entire first-time, first-year entering class of 2002 for the first study; and, in a replication study, participants were the first-time, first-year students entering college in 2003 at a regional Midwestern, public 4-year university (Miller et al., 2007). Results indicated that both seminar participants and students of higher pre-college academic preparation had higher retention rates. Using chi-squared analyses the results were similar in both studies. The effect for both, (a) pre-college academic preparation on retention, and (b) the effect for first-year seminar participation, were statistically significant. No statistically significant impact was found on retention for interactive effects between seminar participation and higher pre-college academic preparation (Miller et al., 2007).

Engberg and Mayhew (2007) conducted a study to examine a first-year seminar course with a diversity theme and the impact it had on student learning outcomes. The target sample for this study were first-time, first-year students who were enrolled in either

the freshman seminar course, an introductory communication course, or an introductory engineering course during the spring semester of 2004 (Engberg & Mayhew, 2007). Engberg and Mayhew (2007) measured three learning outcomes: "(a) multicultural awareness, (b) commitment to social justice, and (c) attributional complexity" (p. 248). Findings on the pre-test showed no differences among students on these issues; however, the post-test results suggested statistically significant increases in learning outcomes for students who participated in the freshman seminar course (Engberg & Mayhew, 2007). Engberg and Mayhew (2007) suggested that opportunities for first-year students to study diversity and culture in small group seminar settings prepares them for future "highly valued" (p. 255) workforce and life skills.

Hendel (2007) examined survey data to compare student satisfaction using a random sample of the fall of 1998 class of 5,086 first-year students attending a large research university. A total of 723 new students (14%) enrolled in the first-year seminar. The university offered 40 seminar sections described as one of three seminar types: academic seminars with varied content related to a faculty member's area of interest (n= 387 students); basic study skills (developmental) seminars (n = 184 students); and seminars taken by students living in the residence halls (n = 152 students) (Hendel, 2007). The Student Experiences Survey, distributed to a random sample of 1,600 first-year students and all 723 first-year students enrolled in a first-year seminar, yielded a sample of 354 seminar participants and 176 non-participants. Survey results revealed a statistically significant positive response in 15 of 92 questions regarding student satisfaction (e.g., advisers help, involvement in faculty research, experiencing a sense of community), and Hendel (2007) observed that more positive responses came from

seminar participants. Using a logistic regression model, seminar participation did not reveal an increase in the probability of retention. The statistically significant predictor of retention to the second-year of college was high school rank; that is, those students graduating high school in the top two quartiles were retained at higher rates than those in the lower quartiles. The overall retention rate was 83.1% for students who began fall 1998 and returned to the same institution in 1999.

Weissman and Magill (2008) sought to measure the effectiveness of two different types of first-year seminars by employing a cluster analysis designed to group students by similar pre-college academic characteristics. They examined the influence of each course type on GPA and retention compared to non-participating peers. The study was conducted at a large doctoral research-extensive, religiously affiliated university located in a midwestern city. Participants were 1,166 full-time, first-time, first-year students entering college in the fall of 2003. The first seminar type examined was a 10-week orientation seminar that focused on campus resources, campus engagement, study and time-management skills, and decision-making. The second seminar type was a semester-long discipline themed course focused on research and inquiry in a specific discipline. Independent samples *t*-tests were used to compare the mean GPAs of students who participated in these two first-year seminar course types with those who did not. Chi-squared tests of independence were used to compare the rate of retention across groups. GPA differences were statistically significant for both types of seminar participants and participants had generally higher GPAs than those who did not participate. Students who took the 10-week orientation course persisted to the second-year at statistically significantly higher rates (91%) than those who did not take a first-year seminar (86%).

Conversely, participants in the semester-long, discipline-themed, first-year seminar course showed no statistically significant retention (87%) than non-participants (86%).

Friedman and Marsh (2009) compared retention and GPA results for participants in first-year seminars taught with an academic theme to results for participants in first-year seminars taught with a college transition theme. The course was a 3-credit-hour elective and study participants were 177 first-year students entering college in the fall of 2006. Researchers used the College Student Expectations Questionnaire to examine differences in college expectations. Pre-college academic preparation was examined via SAT scores, high school GPA, and high school class rank. A chi-squared test of independence was used to measure retention to the second-year of college. Results indicated that there were no statistically significant differences in pre-college academic preparation or in college expectations. Outcomes of college GPA and retention among the two groups was not statistically significantly different. Researchers concluded that the study was important in contributing to the literature that seeks to determine what type of seminar works best; rather than, the question of if a first-year seminar should be offered at all. (Friedman & Marsh, 2009; Henscheid, 2004).

Jamelske (2009) examined first-year seminar course curriculum infused in freshman introductory core content courses. Faculty who taught Spanish 101 or English 110, integrated study skills, university resource familiarization, and out-of-class faculty/student interaction into their courses. In a sample of 1,997 full time students under 20 years of age, researchers declared no evidence of increased GPA or retention for students who participated in introductory courses where the integrated interventions were infused (Jamelske, 2009). Jamelske (2009) suggested that this model of integration was

difficult for professors to implement, and recommended that the program needed professional development support for these faculty members to be more effective in implementing the desired additional content into the curriculum.

In a quantitative research study, Strayhorn (2009) sought to measure the impact of first-year seminar participation for a sample of 755 survey respondents (out of the 2,500 students who fit the sampling criteria of first-time, full-time students) entering college in the fall of 2007. A total of 286 of the 755 student respondents participated in a first-year seminar at a large research institution. The first-year seminar was described as a one-credit-hour extended orientation type course taught by professional staff or graduate assistants during the first seven-weeks of the semester (Strayhorn, 2009). An ex post facto survey, The First-Year Assessment Survey (FYAS), was developed to measure student satisfaction in college. Sample *t*-tests were used to evaluate academic satisfaction (first-semester GPA) and social integration. Strayhorn (2009) reported that students who participated in the 1-credit-hour, first-year seminars did not necessarily have higher satisfaction with college, and were not more integrated into the academic (GPA) and social dimensions of college than their peers. Hierarchical multiple regression test results suggested that the "overall statistical model was significant" (Strayhorn, 2009, p. 18), and the most significant predictors of satisfaction included gender and academic achievement in college; "that is, high-achieving women were most highly satisfied with college compared to their peers" (Strayhorn, 2009, p. 9).

Barton and Donahue (2009) used a multiple-assessment approach to study the effectiveness of a 4-credit-hour, first-year seminar pilot in comparison to the 1-credit-hour, first-year transition course historically offered at an undergraduate-only public

liberal arts college in the northeastern United States. Sample participants were 170 students in the 4-credit-hour courses, 146 in the 1-credit-hour courses, and students who did not participate in either course. Outcome measures are GPA, retention to the second semester, one-year retention, intellectual development, and student attitudes and expectations. Retention was measured for students entering in the fall of 2004 using chi-squared tests of independence. Two-sample *t*-tests were used to compare participant and non-participant GPA outcomes, and an analysis of covariance (ANCOVA) was used to control for differences in pre-college academic performance and college GPA when comparing the two types of transition course outcomes. Students' intellectual development over the first-semester was assessed using a writing assignment developed by the Perry Network and Center for the Study of Intellectual Development (2007), which was given at the beginning and end of the fall semester. Barton and Donahue (2009) used *t*-tests to analyze differences between first-year seminar and other students for writing test score changes over the semester. Student expectations and engagement were compared based on the National Survey of Student Engagement (NSSE) and the Beginning College Survey of Student Engagement (BCSSE) results. In analyzing their data, Barton and Donahue (2009) used a "three-way log-linear G –tests [where sample sizes were large enough] in order to examine the association of student self-reported expectations and outcomes with whether or not students participated in a first-year seminar" (p. 267).

Findings suggested that retention was not statistically significantly different for any student groups. Participants in the 4-hour-credit course had statistically significantly higher GPAs, and although they generally had higher pre-college academic success, they

did not score higher on the Perry Measure of Intellectual Development writing assessment. Researchers suggested that the 4-credit-hour seminar attracted students with higher pre-college academic achievement (Barton & Donahue, 2009).

Ben-Avie, Kennedy, Unson, Li, and Mugno (2012) examined the extent to which a first-year seminar impacted one-year retention rates and student academic performance. Researchers analyzed data from a sample of 1,125 students who entered college in the fall if 2007 at a 4-year state university with a 63% commuter student population. Roughly half (n = 561) participated in the seminar. Using "hierarchical multiple linear or logistic regression, as appropriate … to measure the relative contribution of conventional predictors" (p. 158), researchers analyzed the pre-college student characteristics to account for possible differences in study outcomes due to family economic status, SAT scores, and first-generation status. Student who participated in the seminar had statistically significantly higher one-year retention rates, statistically significantly higher GPAs, and had earned statistically significantly more credit-hours than their peers who did not take the seminar (Bel-Avie et al., 2012).

Readers are referred to Table 2 for a summary of recent first-year seminar research articles and dissertation results detailed in this literature review regarding single institution studies. Note that these studies are presented in order of date with the most recent studies reported first. This information is intended to parsimoniously summarize outcomes of recent studies, to note differences in research samples, in seminar types, in variables included or excluded, and in methods used that will inform comparisons in the current study.

Table 2

Summary of Recent Research Regarding First-Year Seminars (FYS): Single Institution Studies

Author(s)	Year	Topic	Outcomes	Sample	Statistical Method
Ben-Avie et al.	2012	FYS impact on one-year retention rates and GPA	Seminar participants had higher one-year retention, higher GPAs and had earned more credit-hours than their peers	Entering class of 2007: 1,125 students with 561 participating in the FYS	*t*-tests and hierarchical multiple linear or logistic regression
Barton & Donahue	2009	Effectiveness of a 4-credit-hour, first-year seminar pilot and a 1-credit, first-year transition course versus students not participating in a FYS	No statistically significant difference in retention. Participants in the 4-hour-credit course had statistically significantly higher pre-college characteristics and first-year GPAs, but not higher intellectual development (writing skills)	Entering class of 2004 at an undergraduate-only public liberal arts college, in the northeastern United States	Two-sample *t*-tests, paired *t*-tests, ANCOVA, A pre/post writing assignment developed by the Perry Network and Center for the Study of Intellectual Development, NSSE, and BCSSE survey data

(continued)

Author(s)	Year	Topic	Outcomes	Sample	Statistical Method
Jamelske	2009	FYS curriculum infused in freshman introductory core content courses (Spanish & English)	No evidence of increased GPA or retention to second-year	1,997 full time students.	Maximum likelihood logit estimation and ordinary least squared regression
Strayhorn	2009	Impact of FYS on college satisfaction (GPA, social integration, and overall satisfaction)	FYS participants not more integrated into the academic and social dimensions of college than their peers	Entering class of 2007: 755 students with 26 participating in the FYS	Ex post facto survey, *t*-tests, Hierarchical multiple regression tests
Weissman & Magill	2008	Two different types of FYSs and impact on GPA and retention	GPA differences were statistically significant for both FYSs versus nonparticipants. Retention rates were statistically significant for participants of the 10-week orientation seminar, but not statistically significant for the discipline-themed semester long FYS	Entering class of 2003: 1,166 full-time, first-time first-year students at a large doctoral research-extensive, religiously affiliated university located in a midwestern city	*t*-tests, chi-squared

(continued)

Author(s)	Year	Topic	Outcomes	Sample	Statistical Method
Hendel	2007	FYS impact on student satisfaction and retention	Statistically significant positive response in 15 of 92 questions regarding student satisfaction. No increase in retention because of the FYS	Entering fall class of 5,086 354 seminar participants and 176 non-participants of the 1998 first-year students attending a large research university	Student Experiences Survey for student satisfaction and a logistic regression model for probability of increased retention
Engberg & Mayhew	2007	Impact of FYS with diversity theme on multicultural, social justice and attributional complexity	Only FYS participants had statistically significant increases in these learning outcomes	first-time, first-year students enrolled in the FYS, or an introductory communication course, or in an introductory engineering course	ANCOVA
Miller et al.	2007	Impact of FYS, participation and of pre-college academic preparation on first-year retention	Both FYS participants and students of higher pre-college academic preparation had higher retention rates	Entering class of 2002 and a replication study with the entering class in 2003 at a regional Midwestern, public 4-year university	chi-squared analyses
Cox et al.	2005	Impact of a business FYS on retention and GPA	SAT mean was lower for business students, yet they had higher retention and GPA	Entering class of 2001: 1,315 first-year students at a 4-year university. Business FYS students = 179	Probit model, regression equations

Meta-analytic studies. Keup and Barefoot (2005) examined academic and social experiences of first-year students who took a first-year seminar. Starting with longitudinal data consisting of 269,413 students from 434 four-year universities who completed the 2000 CIRP Freshman Survey, Keup, and Barefoot (2005) selected 17,737 students attending 57 four-year universities as a representative sample of 4-year universities nationwide. These students were sent the 2001 Your First College Year Survey, and the resulting response rate of 21% produced a sample of 3,680 students from 50 institutions (Keup & Barefoot, 2005). Using multivariate regression analyses that modeled Astin's (1984) input-environment-outcome (I-E-O) framework, results suggested that first-year seminars were successful in improving key student outcomes: (a) engagement in better academic practices; (b) more frequent use of campus resources; (c) better success in forming student networks in the first-year; and (d) more frequently establishing meaningful relationships with faculty and staff. Moreover, results suggested that first-year seminar participants perceived a more successful transition to college which supports theories of retention to the second-year of college and to persistence to graduation (Keup & Barefoot, 2005).

Porter and Swing (2006) used a multi-level modeling approach to control for different types of 4-year institutions in a multi-university study to isolate the various components of first-year seminar content and the impact of each component on student persistence. Data were collected from over 20,000 students from 45 different 4-year institutions using a survey instrument designed to measure the effect in selected course content areas (Porter & Swing, 2006). Because much research had been conducted regarding the relationship between first-year seminar participation and persistence (e.g.,

Friedman & Alexander, 2006; Jamelske, 2009; Seidman, 1996; Stovall, 2000; Tinto, 1993), Porter and Swing (2006) focused on identifying which components of the course contributed most to persistence. Pre-enrollment academic performance characteristics, finances, and demographics data were used to control for student differences, and data were collected to control for institutional differences (Porter & Swing, 2006). Outcomes suggested that higher retention occurred with students who participated in first-year seminars that specifically included study skills and health education (Porter & Swing, 2006).

Using the Wabash National Study of Liberal Arts Education longitudinal study (Center of Inquiry, 2011) that included institutional data from 48 diverse colleges and universities, Padgett, Keup, and Pascarella (2013) tested the first-year seminar impact on student outcomes of intrinsic life-long learning attributes. Specifically, Padgett et al. (2013) found that students who participated in first-year seminars purposefully designed with inquiry-based learning outcomes statistically significantly increased student motivation for cognitive inquiry and need for cognition. Researchers concluded that first-year seminars were "valued instructional vehicles for achieving complex intellectual developmental objectives for undergraduates" (Padgett et al., 2013, p. 146).

In a study of extended orientation first-year seminars, data revealed that students who voluntarily enrolled in a first-year seminar course had statistically significantly higher GPA and first-year retention to the second-year (Berry, 2014). Interestingly, Berry's (2014) study included retention statistics from 43 institutions and larger effects in retention were realized in 39 institutional studies where student samples contained less

than 75% White students. Results from small and mid-size institutions produced larger effect sizes (Berry, 2014).

Edwards (2015) examined retention rates among a sample of 26 public and private 4-year historically black colleges and universities (HBCUs) located in Delaware, the District of Columbia, Maryland, North Carolina, Pennsylvania, and Virginia. Edwards (2015) used a survey instrument adapted from a 2009 national survey, conducted by the National Resource Center for the First Year Experience and Students in Transition, to identify first-year seminar types that were implemented and corresponding first-year retention rates observed at each of the HBCUs during academic years 2010 through 2012. Results indicated that of the five seminar types identified by Barefoot (1992) and substantiated later by Young and Hopp (2014), the extended orientation seminar was the most implemented seminar type across HBCUs and furthermore yielded the highest one-year retention rates (above 70%).

In a quantitative meta-analytic summary of the literature on first-year seminar effectiveness, Permzadian and Credé (2016) examined 284 independent empirical studies: 89 studies on first-year GPA outcomes, and 195 that measured retention for first-year seminar participants and nonparticipants at 2- and 4-year colleges and universities. They used an interactive psychometric meta-analytic method and a subgroup method based on Hunter and Schmidt's (2004) random effects model to examine the effect of different types of first-year seminars on first-year GPA and retention. Findings for GPA outcomes were as follows: (a) participants in hybrid seminars with academic content had higher GPAs than extended-orientation seminar participants; (b) participants in seminars taught by faculty or administrative staff had higher GPAs than those taught by or with

students as instructors; and (c) peer-reviewed studies reported higher GPAs than other studies (i.e., dissertations or other non-peer reviewed studies) suggesting the distortion effect of studies with positive or statistically significant results being published at higher rates that those without statistically significant findings (Permzadian & Credé, 2016). Retention outcomes included higher retention for those participants who participated in (a) extended orientation seminars, (b) seminars taught by faculty or administrative staff, (c) seminars offered to all incoming students as opposed to only to academically underprepared students, (d) seminars of shorter length, (e) seminars at smaller institutions, and (f) seminars not attached to a learning community (Permzadian & Credé, 2016). Permzadian and Credé (2016) concluded that first-year seminars were meaningful and effective if properly designed. Paradoxically, the empirical study results revealed that first-year seminars had a small average effect on first-year GPA and on retention to the second-year of college when compared to nonparticipants.

Specifically, as measured by GPA and retention, the empirical evidence indicated mixed results. Furthermore, the type of seminar and the type of institution (i.e., 2-year or 4-year) mediated the results on GPA and retention (Permzadian & Credé, 2016). Moreover, they argued that even small effects can have practical significance at the institutional level when reporting an increase in retention as it relates to the actual number of students who persist. Table 3 is a summary of recent first-year seminar research articles regarding multi-institution studies. The purpose of including meta-analytic study article details previously described was to aid in the understanding of historically mixed results across first-year seminar outcome measures. This perspective

was sought to situate the current study in the historical context of first-year seminar effectiveness.

Table 3

Summary of Recent Research Regarding First-Year Seminars (FYS): Multi-Institution Studies

Author(s)	Year	Topic	Outcome	Sample	Statistical Method
Permzadian & Credé	2016	FYS type effect on GPA and retention	FYS had a small average effect on first-year GPA and retention, institutional characteristics moderate results, small effects can have practical significance	284 independent studies: 89 studies on first-year GPA outcomes, 195 that measured retention	Random effects model with interactive psychometric meta-analytic method and subgroup method
Edwards	2015	FYS type effect on retention at HBCUs	The extended orientation FYS was the most implemented seminar type across HBCUs (70%) and yielded the highest retention rates (above 70%)	26 public and private 4-year HBCUs located in Delaware, the District of Columbia, Maryland, North Carolina, Pennsylvania, and Virginia during academic years 2010 through 2012	Survey instrument adapted from a 2009 national survey conducted by the National Resource Center for the First Year Experience and Students in Transition

(continued)

Author(s)	Year	Topic	Outcome	Sample	Statistical Method
Berry	2014	FYS effect on retention GPA	Increase in GPA and retention when voluntary enrollment in FYS highest retention when FYS included study skills & health topics	20,000 first-year students at 45 4-year institutions	Meta-analytic Procedures: controlling for effect size variance; shifting unit of analysis method; homogeneity analysis; random effects error model
Padgett et al.	2013	FYS impact on life-long learning	FYS enhanced student motivation to inquire; fostered meaningful learning objectives that further boosts student need for cognition	First-year full-time undergraduates who entered college in the fall of 2006-2008 from 48 diverse colleges and universities	Weighted, multivariate OLS regression
Porter and Swing	2006	FYS content components and impact on student retention	Highest retention when FYS included study skills and health topics	20,000 students from 45 4-year institutions using a survey instrument designed to measure the effect in selected course content areas	Multilevel modeling

(continued)

Author(s)	Year	Topic	Outcome	Sample	Statistical Method
Keup and Barefoot	2005	FYS impact on academic & social experiences	Engagement in better academic practices, more frequent use of campus resources, better success in forming student networks in the first-year, more frequent establishment of meaningful relationships with faculty and staff	3,680 students entering the first-year of college in 2000 from 50 institutions	Multivariate regression analyses that modeled Astin's (1991) Input-Environment-Outcome framework

Summary

The correlation between higher retention rates and increased institutional selectively is well documented (Upcraft, Gardener, & Barefoot, 2005). Pre-college indicators for studying retention frequently include prior academic achievement, (Astin, 1993; Upcraft et al., 2005), socioeconomic status (Astin 1993), gender (Astin, 1993), and race/ethnicity (e.g., except for Asians, minorities at Predominantly White Institutions persist at lower rates than Whites; Stage & Hossler, 2000). Institutional variables include difference in selectivity (as evidenced by SAT/ACT entrance score achievements), institution type (e.g., 4-year institution persistence is generally higher, Terenzini & Pascarella, 1991; 2005), public versus private institutions (Astin, Oseguera, Sax, & Korn, 2002; Terenzini & Pascarella, 1991) and racial composition. Upcraft et al. (2005) outlined the environmental variables that were related to persistence as follows:

> First-year grade point average (GPA), major, enrollment status (full or part time), quality of student effort, interactions with faculty, interactions with students, participation in extracurricular activities, work, student satisfaction, alcohol abuse, Greek affiliation, campus climates, financial aid, and participation in intercollegiate athletics. (p. 37)

According to Noel-Levitz (2013), among the top 10 most effective intentional institutional interventions for retention and college completion reported by 4-year institutions of higher education for first-year students were first-year orientation, first-year seminars, learning communities, experiential learning (e.g., internships, service learning opportunities) related to majors, a requirement for personalized academic advising, supplemental instruction, programs for academically at-risk students, tutoring, and international student programming. Upcraft et al. (2005) concluded that "the first-year seminar is one of the most powerful predictors of first-year persistence into the sophomore year" (p. 41).

Taking a qualitative approach to discover why students were and were not retained to the second-year of college, Wilcox, Winn, and Fyvie-Gauld (2005) interviewed 22 first-time first-year students who completed their first-year and 12 first-time, first-year students who withdrew from a university in the United Kingdom. Analysis of interview data supported the concept of social support as a key predictor of student retention (Wilcox et al., 2005). Furthermore, results revealed that students rarely left college for only one reason and that three themes of departure emerged: (a) lack of social support (e.g., inability to make meaningful friendships, lack of confidence, no connection with faculty); (b) academic factors (e.g., study skills, poor attendance,

unhappy with courses taken); and (c) material factors (e.g., distance from home and living in a residence hall). Specifically noted was that the social support theme was the strongest factor and was present in many of the interviews. Wilcox et al. (2005) suggested that in addition to academic factors, equal emphasis should be place on social integration when considering retention strategies.

First-year seminars have been in higher education since the 1970s, but as they evolve to meet more diverse college student needs, trends have indicated that they are on the rise and have been offered in more diverse themes. In consideration of the many limitations and variability of institutional selectivity and culture, caution was exercised in reviewing first-year seminar research for inclusion in this study. This current single-institution study may not be generalizable to other institutions, but such studies may inform those researchers intent on initiating or refining a first-year program. Furthermore, these studies might assist researchers conducting meta-analysis across similar institutions. To that end, this literature review was representative of recent persistence and GPA measures of institutional studies regarding first-year seminars.

CHAPTER III

Method

The purpose of this study was to investigate the extent to which the relationship between (a) student demographic variables (i.e., ethnicity, gender, first generation status, low income), college admission variables (i.e., admission status, SAT/ACT scores, remediation requirements), and (b) GPA and retention was influenced by first-year seminar course participation at one Tier II doctoral university in the southwestern United States (U.S. News and World Report, 2012). In this chapter, the method and the variables to be collected to answer the research question were discussed. Specifically, the topics covered were the: (a) research questions; (b) overview of the research design; (c) sampling and participant selection; (d) characteristics and context of the first-year seminar course; (e) data source; (f) instrumentation; (g) data analysis; and (h) chapter summary.

The following student demographic variables were examined: (a) gender; (b) ethnicity; (c) at-risk status (developmental education); (d) first-generation status; and (e) low-income status. Additionally, ACT/SAT scores, admissions status (i.e., conditional admittance, regular admittance or admitted with college credit status), and participation in a first-year seminar (FYS) were examined. First-year college success was measured by the fall to fall one-year retention rates and by student first-year GPA (fall 2014 semester through spring semester 2015) comparing participants in the first-year seminar course with non-participants to examine to what extent the first-year seminar course influences the relationship with the outcome variables.

At the university under study the 3-credit-hour, writing-enhanced elective first-year seminar course was similar to those described in a national review of this type of course by Young and Hopp (2014) and incorporated (a) critical thinking and decision making, (b) exploration of personal strengths related to the selection of college major and minor fields of study, (c) academic degree exploration and planning, (d) career exploration connected to major and minor fields of study, (e) out-of-class campus social and academic activities, (f) learning strategies, and (g) service learning.

Research Questions

The following research questions were investigated in this study:

1. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by gender?
2. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by ethnicity?
3. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by at-risk status?
4. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by first-generation status?
5. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by low-income status?
6. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by admittance status?
7. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by gender?

8. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by ethnicity?

9. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by at-risk status?

10. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by first-generation status?

11. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by socioeconomic status?

12. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by admittance status?

Overview of Design

An explanatory quantitative non-experimental cross-sectional design was used to determine to what extent a first-year seminar course participation influenced the relationship between student demographic variables, student college admissions variables, and the outcome variables of first-year GPA and retention. According to Johnson (2001), when categorical or quantitative independent variables that cannot be manipulated, due to the nature of the variable, (e.g., gender, ethnicity, GPA) or should not be manipulated because of ethical concerns (e.g., participation in an FYE), randomized experimental study methods are not possible. Because random assignment of students enrolling in the first-year seminar did not occur, the study was non-experimental (Johnson & Christensen, 2012). Specifically, in this study student groups were examined by gender, ethnicity (i.e., Black, Hispanic, and White), at-risk status (i.e., developmental education in English or mathematics), first-generation status (no parent has attended

college), low-income status (Pell Grant eligibility), admissions status (conditional, regular or with college credit), and pre-college ACT/SAT scores during one academic year. This study was explanatory because the researcher sought to identify and explain causal factors that influenced GPA and retention (Johnson, 2001). The research design was cross-sectional because the data were collected during one academic year, and data collected applied to each case at a single period for GPA and retention outcomes (Johnson, 2001).

Figure 1 provides a conceptual model of the variables under study.

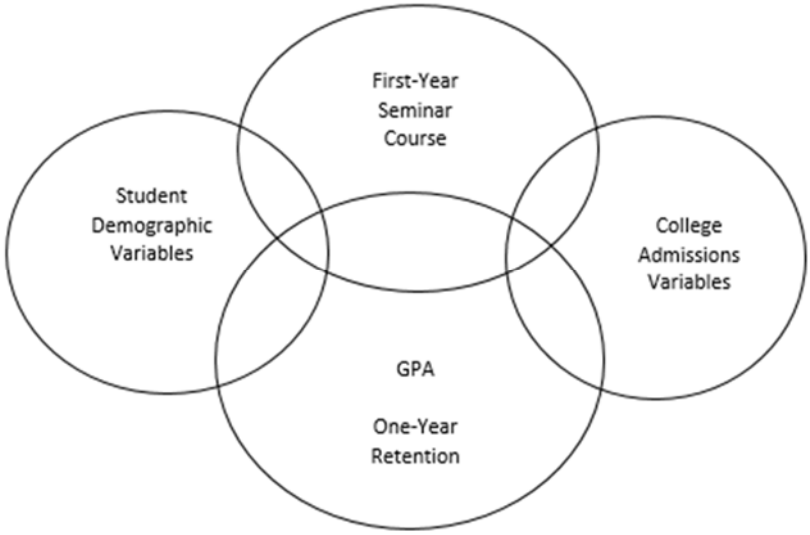

Figure 1. Conceptual model of variables under study.

The success of first-year college students has been studied extensively (e.g., Barefoot et al., 2005; Barton & Donahue, 2009; Ben-Avie et al., 2012; Keup & Barefoot, 2005; Pascarella & Terenzini, 2005). Reasons why students are successful in the first-year of college are complex, and there are multiple explanations for student withdrawal

from college (e.g., Astin, 1984; Kuh et al., 2008; McInnis, 2001, Tinto, 2012). Two-way ANOVAs were conducted to examine the influence of first-year seminar participation on GPA outcomes by (1) gender, (2) ethnicity, (3) at risk status, (4) first-generation status, (5) low-income status, and (6) admittance type. A chi-squared test of independence was applied to assess observed frequencies in one-year retention rates of students participating in the FYS course and students not participating in the FYS course. The chi-squared test of independence was the selected statistic because multiple independent variables (FYS participation by student group) and the dependent variable (one-year retention) consisted of categorical (nominal) level data (Huck, 2012; Johnson & Christensen, 2012).

Sampling and Participant Selection

The target population of this study was a criterion-based sample of first-time, first-year students entering the institution under study in the fall 2014 semester, which included full-time (n = 2,514) and part-time (n = 123) students. Within the 2014 first-year student population, public data reports obtained from the THECB website revealed that the enrollments by ethnicity for the institution under study were 1.6% Asian, 21.9% Black, 29.9% Hispanic, 43.3% White, and 3.3% other ethnicities. Gender enrollment was reported at 65.3% female and 34.7% male students (THECB, 2015). This particular 2014-entering class had mathematics SAT scores ranging from 470-550 and ACT mathematics scores of 19-24. The SAT reading score range was 450-540 and the ACT English scores were in the range of 17-22 (THECB, 2015).

Characteristics and Context of the First-Year Seminar Course

The first-year seminar course was open to all students with less than 60 college credit-hours accumulated. The course was a regular credit-bearing, three-credit-hour writing enhanced (i.e., 50% of course grades are derived from writing assignments) elective. A percentage of the student sample (12.3%) were conditionally admitted and were required to take the course. That is, the university allowed certain first-time students with an SAT/ACT score or class rank slightly below admissions requirements to petition the university for conditional admittance. One of the stipulations for conditional admittance was the requirement to take the first-year seminar course during the first semester of college. Universities track student pre-college performance and categorize these differences by admittance type to inform admissions decisions and to report them to the THECB. As such, the categories of (a) conditional admittance (i.e., those admitted and required to take the first-year seminar course), (b) regular admittance (i.e., students who meet the regular admissions standards), (c) students entering with college credit, and (d) an Other category for students not categorized in the first three levels that compromised the variable admissions status in the present study.

Two additional groups of students were required to take a specifically designated section of the first-year seminar courses. One group participated in a degree-required special section to prepare for a course of study in veterinary medicine. The other group was scholarship recipients awarded full tuition from a specific foundation and were required to take a special section of the first-year seminar together as a means of building community among the group. This scholarship group had high academic achievement and low-income levels that qualified them for a full scholarship to college. All other sections,

some themed with academic disciplines, and some linked to other courses, were open to all incoming students.

The first-year seminar program was situated in the division of Academic Affairs. The seminar course was taught primarily by university administrators and staff. Instructors were compensated by a per course scaled flat salary amount determined by educational degree attainment and seminar course teaching experience.

There were 25 sections offered in the fall of 2014 and these individual sections varied by seminar type, and, in some cases, by the student major or interest. Some sections were linked with other courses, so that the same group of students could take several classes together in intentionally designed learning communities or in residential learning communities. Because of the choices of linked courses required in a given learning community, some students were excluded from participating in a particular learning community section of a first-year seminar course if they had already received college credit for the other linked courses (e.g., English 1301, History 1301) prior to entering college. Table 4 contains information about each section and includes (a) the seminar type as classified by Young and Hopp (2014), (b) the instructor profile, and (c) notes about enrollment opportunities and restrictions. This level of detail is provided to explain the current study context and to inform comparison and replication for future studies (Wilkinson & the Task Force on Statistical Inference, 1999).

Table 4

First-Year Seminar Characteristics at the Institution Under Study

First-year seminar course section attributes	Instructor Profile	Young & Hopp (2014) Seminar Type	Section Notes
General Interest UNIV 1301	Assistant Athletic Director Division of Student Services Doctoral Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	Assistant Director of Career Development and Exploration Division of Enrollment Management Master's Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	Assistant Director of the Counseling Center & Staff Psychologist Division of Student Services Doctoral Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	College of Health Science Adjunct Professor Division of Academic Affairs Master's Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	K-12 ESC Director Division of Academic Affairs Master's Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	College of Sciences Coordinator/Instructor Division of Academic Affairs Master's Degree	Academic with Uniform Content	Open to any first-year student

(continued)

First-year seminar course section attributes	Instructor Profile	Young & Hopp (2014) Seminar Type	Section Notes
General Interest UNIV 1301	Director, First-Year Experience & Student Success Initiatives Division of Academic Affairs Master's Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	Assistant VP of Student Services Doctoral Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	Administrative Associate to the Provost Division of Academic Affairs Master's Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	Adjunct Professor UNIV 1301 & Art department Division of Academic Affairs Master's Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	Director of Career Services Division of Enrollment Management Master's Degree	Academic with Uniform Content	Open to any first-year student
General Interest UNIV 1301	Director, Leadership Academy Division of Academic Affairs Master's Degree	Academic with Uniform Content	Open to any first-year student
Foundation Scholarship UNIV 1301	Associate Vice Provost for Division of Academic Affairs Doctoral Degree	Academic with Uniform Content	Open only to Terry Scholars (no Conditionally Admitted students)

(continued)

First-year seminar course section attributes	Instructor Profile	Young & Hopp (2014) Seminar Type	Section Notes
Honors UNIV 1301	Associate Dean, Honors College Division of Academic Affairs Doctoral Degree	Academic with Uniform Content	Open to any student admitted to the Honors College (no conditionally admitted students)
Pre-Vet UNIV 1301	Adjunct professor in the Dept. of Veterinary Sciences and a local veterinarian Division of Academic Affairs Doctor of Veterinary Medicine	Hybrid: Pre-professional and Academic with Uniform Content	Open only to selected Animal Science majors with a pre-veterinary concentration
Pre-law (linked courses) Freshman Learning Community UNIV 1301	Center for Law, Engagement, And Politics Coordinator Division of Academic Affairs Master' Degree	Hybrid: Pre-professional and Academic with Uniform Content	Open only to selected first-year students with a Pre-Law concentration (no conditionally Admitted students)
Advanced Freshman Learning Community	Director, Leadership Academy Division of Academic Affairs Master's Degree	Hybrid: Leadership Theme and Academic with Uniform Content	Open to any 25 first-year students with college credit or leadership interests. Linked courses were second semester & sophomore level courses

(continued)

First-year seminar course section attributes	Instructor Profile	Young & Hopp (2014) Seminar Type	Section Notes
Business (linked courses) Freshman Learning Community UNIV 1301	Assistant to the Dean College of Business Administration Division of Academic Affairs Master's Degree	Hybrid: Pre-professional and Academic with Uniform Content	Open to any first-year Business major
Education (linked courses) Freshman Learning Community UNIV 1301	Adjunct Professor UNIV 1301 & Art department Division of Academic Affairs Master's Degree	Hybrid: Pre-professional and Academic with Uniform Content	Open to any first-year Education major
Criminal Justice (linked courses) Freshman Learning Community UNIV 1301	Assistant Director of Residence Life Master's Degree	Hybrid: Pre-professional and Academic with Uniform Content	Open to any first-year CJ major
Criminal Justice (linked course and residential) Freshman Living Learning Community UNIV 1301	Director, Criminal Justice (CJ) Advising Division of Academic Affairs Master's Degree	Hybrid: Pre-professional and Academic with Uniform Content	Open to any first-year CJ major On campus residence hall living requirement
General Interest Living Learning Community (linked course and residential) 25 of the 100 student Freshman Learning Community UNIV 1301 (1 of 4)	Program Coordinator, First-Year Experience Division of Academic Affairs Master's Degree	Academic with Uniform Content	Open to any first-year student On campus residence hall living requirement

(continued)

First-year seminar course section attributes	Instructor Profile	Young & Hopp (2014) Seminar Type	Section Notes
General Interest Community (linked course and residential) 25 of the 100 student Freshman Learning Community UNIV 1301 (2 of 4)	Director of Residence Life Division of Student Services Master's Degree	Academic with Uniform Content	Open to any first-year student On campus residence hall living requirement
General Interest Community (linked course and residential) 25 of the 100 student Freshman Learning Community UNIV 1301 (3 of 4)	Executive Director for Residence Life Division of Student Services Master's Degree	Academic with Uniform Content	Open to any first-year student On campus residence hall living requirement
General Interest Community (linked course and residential) 25 of the 100 student Freshman Learning Community UNIV 1301 (4 of 4)	Director for New Student Orientation Division of Enrollment Management Master's Degree	Academic with Uniform Content	Open to any first-year student On campus residence hall living requirement

All course sections used the same textbook and additional readings, even when themed differently. The course section breakdown was: (a) 12 general interest academic with uniform content sections; (b) three sections that were pre-professional or themed academic with uniform content seminars offered to select students' sections (i.e., pre-veterinary, honors, and Terry scholarship recipient students); (c) five academic with uniform content sections linked with other courses in non-residential first-year learning communities; and (d) five academic with uniform content sections linked to first-year residential learning communities where students lived in the same residence hall and took

at least two classes with the same students in the learning community (Young & Hopp, 2014).

Each first-year seminar section offered an enrollment capacity of 25 students, except for the Criminal Justice Freshman Living Learning Community. There were 36 seats available in this community to match the 36 beds available in the residence hall where these Criminal Justice Freshman Learning Community students were housed. Therefore, a grand total of 636 seats were available for registration in 25 sections of the UNIV 1301 first-year seminar course. Seminar instructors (N = 23) held either a master's degree (n = 17), a doctorate degree (n = 5), or a Doctor of Veterinary Medicine (n = 1). Most instructors were also university administrators or staff (n = 19), and others were classified as adjunct professors (n = 4).

Data Source

After dissertation committee approval and subsequent Institutional Review Board (IRB) approval, institutional archival data were obtained for the 2014-2015 academic year. The Texas legislature mandates that state colleges and universities report accurate student achievement data on a regular basis. The institution under study routinely collects these data for reporting to state and national education agencies for accountability measures. As such, student level data were requested from the institution office that provides this reporting.

College enrollments, entrance examination scores (i.e., SAT/ACT scores), and overall GPA scores (fall 2014 semester through spring semester 2015) and retention results collected after completion of the first-year of college (i.e., as of the census date in fall of 2015) were also secured. Additionally, information about ethnicity, gender, first-

generation, at risk, low income (i.e., determined by Pell grant eligibility), admissions status (e.g., conditionally admitted, admitted with college credit, regular admittance, or other status), and participation in the first-year seminar course was obtained.

Student Variables. Student variables that emerged from the literature as collected by higher education institutions that were important predictors of college success were (a) gender (Combs et al., 2010), (b) ethnicity (Bali & Alvarez, 2004; Cortes, 2010; Rodriguez, 2015), (c) students entering college underprepared and in need of developmental education (Barnes & Slate, 2011; Barnes et al., 2010, Harvey, 2013), (d) first generation students (McCarron & Inkelas, 2006), and (e) low-income students (Bailey & Dynarski, 2011b). Ethnicity, gender, and first-generation status were self-reported by students and collected by universities in the college application process and in subsequent university pre-registration surveys. Underprepared students in need of remediation were determined by entrance scores (SAT/ACT) or by diagnostic college placement examinations designed to measure college-readiness for mathematics, reading, and English. Additionally, demographic variables for low-income students were determined by Federal Pell Grant eligibility.

These student demographic variables and the resulting first-year academic performance outcomes have been used to pinpoint areas for academic interventions in secondary and in postsecondary education in the past (e.g., Combs et al., 2010; Barnes et al., 2010; Conley, 2011). Harvey (2013) revealed statistically significantly lower SAT and ACT scores in a 10-year study of historically ethnically underrepresented college students (e.g., Black and Hispanic). Furthermore, low-income students generally enroll in college and persist to graduation at rates lower than their peers (Bailey & Dynarski,

2011a). Buchmann, Condron, and Roscigno (2010) suggested that more advantaged students (e.g. higher income) may have higher rates of college enrollment and completion than lower-SES students, due to increased access to and use of test preparation and tutoring services that improve standardized test performance. Authors of studies analyzing first-generation student success in college frequently reported results that indicated first-generation students were generally more likely to be from ethnically underrepresented groups (Horn & Nunez, 2000; Pascarella et al., 2004) and more likely to come from low-income families (Terenzini et al., 1996). Moreover, college retention and degree attainment results were reported as lower for first-generation, ethnically underrepresented, and low-income students (Bali & Alvarez, 2004; McCarron & Inkelas, 2006).

Institutions must regularly report the number of students who take developmental mathematics or English and the persistence to graduation for these students. Some estimates were that between 35% to 40% of first-year college students must complete developmental mathematics, reading, or English courses before moving on to college level courses in these and other subject area courses (Bailey, Jeong, & Cho, 2010; Bettinger et al., 2013). Understanding how these student demographic data co-vary with college success and with college interventions designed to support success were important to this study; and, as such, were investigated.

College Admissions Variables. The admissions status of each entering student reflected the university policy for further classifying students in an internally designed rating system for assessment of admissions decisions and for first-year course selection. As such, students who were classified as (a) conditionally admitted, (b) regularly

admitted, (c) admitted with college credit, and (d) an Other category were included in this study. Analysis of this variable further differentiated the pre-college student entering characteristics and subsequent results of college success.

Standardized tests such as the SAT and ACT are widely used by colleges and universities to supplement other student performance indicators (e.g., high school grades, high school class rank) to make academic admissions decisions for entry into college (Atkinson, & Geiser, 2009; Bettinger, Evans, & Pope, 2013). Although grading of high school work can be a highly subjective practice, much research suggests that high school grades are a better predictor of college success than standardized tests (Atkinson & Geiser, 2009; Geiser & Santelices, 2007; Rothstein, 2004). The university under study did not use high school GPA in considering admissions decisions. Specifically, this university published on its website the combination of SAT or ACT scores and high school class rank as the primary standards for admittance decisions for the entering class of 2014. For the 2014-2015 admissions standards, the institution under study used a top 25% high school rank as the cut off rank for automatic admissions regardless of SAT or ACT scores.

After affirmative action plans were banned in Texas college admissions decisions in 1997 (Cortes, 2010; Hopwood v. University of Texas, 1996), Texas instituted the Top 10% Plan to diversify the campus student body and increase access to college for underrepresented students. Cortes (2010) explained that the Top 10% Plan "guaranteed automatic admission to any public university of choice to all seniors who graduate in the first decile of their graduating high school class" (p. 1111). Paradoxically, in a study analyzing the fall to fall first-year student retention and six-year graduation rates of lower

ranked underrepresented college students, Cortes (2010) reported that these students persisted at lower levels under the Texas 10% Plan than under prior affirmative action plans at Texas universities.

Caution should be exercised when using only the SAT/ACT score as a predictor of first-year college GPA. Results of such a study may not reveal the underlying variables of low-income and parents' education level that have also been shown to correlate with and "account for a substantial share of the variance in SAT scores" (Rothstein, 2004, p. 314); and thus, college success outcomes. Researchers argue that high school grades are less relative to socioeconomic factors than are standardized test scores (Atkinson & Geiser, 2009), and further that validity studies that do not include low income variables may overestimate the correlation between SAT and first-year GPA (Rothstein, 2004).

ACT/SAT reliability. Score reliability is the ability of the instrument (i.e., the SAT or ACT examination) "to measure or produce the same results under the same conditions (Rothstein, 2004, p. 12). Further, reliability of scores is the interpretation of the consistency of results and is an essential component of research methodology (Johnson & Christensen, 2008). According to Ewing, Huff, Andrews, and King (2005), in testing score reliability for the SAT examination, the College Board uses, "content specialists, measurement experts, and cognitive psychologists, to specify a set of skill categories hypothesized to underlie performance on each SAT test section (i.e., critical reading, mathematics, and writing)" (p. 1). Furthermore, College Board (2015) statistics revealed that students who took the test for a second time had scores like the initial scores, as indicated by a standard measurement error in the "range of 32 points above or below the first score" (para 3).

ACT/SAT validity. Test validity refers to whether a test measures what it is intended to measure (Field, 2009). Recent validity research (College Board, 2014c; Shaw, 2015) supports the use of SAT scores for college admissions decisions. Sources of evidence for validating SAT scores included the structure and content of the test; in addition to, the correlations between scores, the college success predictions based on these scores, and the actual outcomes versus predicted outcomes (Shaw, 2015). Results of large scale studies provided empirical evidence that the SAT scores accurately predicted first-year GPA and retention rates and Shaw (2015) stated that "higher SAT scores are associated with higher retention rates" (p. 10).

To ensure that the ACT examination measures what it is supposed to measure, ACT regularly conducts research to align the test questions with the knowledge expected in first-year college courses. ACT derives college-readiness scores from this research that predicts college-readiness. Moreover, ACT collects and compares student performance data as evidence for setting the college performance benchmarks (Clough & Montgomery, 2015). According to Clough and Montgomery (2015), students meeting benchmarks in subject areas have a 50% chance of making a B or better in a related entry-level college course.

Several studies suggest that SAT and ACT scores are a biased predictor of first-year success for underrepresented student groups (Atkinson & Geiser, 2009; Geiser & Santelices, 2007; Rothstein, 2004). Notwithstanding the bias and imperfect predictor variables for college success, the fact remains that the pre-matriculation data components identified in the literature; and thus, in this study, are still widely used and are somewhat successful at identifying students more likely to persist in college. Studying how these

variables impact college success in new settings, provides a foundation for institutions of higher education to build standards for and improvement of college degree attainment for diverse students entering college today (Pike, Hansen, & Childress, 2015).

Data Analysis

Chi-squared tests and ANOVAs are commonly used statistical techniques (Huck, 2012; Thompson, 2006). ANOVA was used to compare the mean GPA of students who took the FYS with students who did not take the FYS. Similarly, each of other variable groups of gender, ethnicity, first-generation status, low-income, admission status, and (at-risk) remediation requirements were analyzed for differences in mean GPA. The interaction between FYS and each variable group was also explored. To estimate effect sizes, the percentage of variability that independent variables explained the relationship to the dependent variables of GPA and retention (Trusty, Thompson, & Petrocelli, 2004), eta^2 (η^2) was used. If it was determined that data assumptions were violated, the Welch test, in the presence of heterogeneity of variance, was presented for comparison (Harwell, Rubinstein, Hayes, & Olds, 1992). If the data were non-normal, the Kruskal-Wallis was presented for comparison.

Chi-squared statistical analyses were used to compare the student one-year retention for those who took the FYS with students who did not take the FYS. Similarly, each of other variable groups of gender, ethnicity, first-generation status, low-income, admission status, admissions status, and (at-risk) remediation requirements were analyzed for differences in possible influence of the FYS on one-year retention. The Cramer's V statistic was used to indicate the "strength of association in chi-squared analyses" (Trusty et al., 2004).

Summary

This chapter described the method that was used in the present research study. The researcher sought to understand to what extent a first-year seminar course influences the relationship between student entrance characteristics and GPA and retention in the first-year of college. An explanatory quantitative non-experimental design using chi-squared tests to analyze one-year retention, and ANOVAs to analyze first-year GPAs was used. Archival institutional data from one-year (2014-2015 academic year) at one 4-year university were used to better understand relationships. The research questions, research design overview, sampling and participant section, and characteristics and context of the first-year seminar course were presented in this chapter. Additionally, data sources and data analysis were discussed.

CHAPTER IV

Results

High impact student experiences in the first-year of college such as participation in a first-year seminar have been the focus of many studies to investigate evidence of improved first-year GPA and student one-year retention rates (Astin, 1984; Kuh, 2008; Kuh et al., 2008; Tinto, 2012). Studies in which prior academic performance, student demographics and college admissions variables impact the relationship between retention and GPA may reveal differences among students with multiple success and/or risk factors who take a first-year seminar course compared to those who do not (MacKinnon, Fairchild, & Fritz, 2007; Williford et al., 2001).

The purpose of this study was to investigate the extent to which the relationship between (a) student demographic variables (i.e., ethnicity, gender, first generation status, low income), college admission variables (i.e., admission status, SAT/ACT scores, remediation requirements), and (b) GPA and retention were influenced by first-year seminar course participation at one Tier II doctoral university in the southwestern United States (U.S. News and World Report, 2012). Students who took the FYS course were hypothesized to have on average higher GPA and one-year retention outcomes. A quantitative, nonexperimental, cross-sectional study utilizing ANOVA and chi-squared statistics was used to examine the relationships between FYS course participation and the selected variables. Presented in this chapter are the research questions, data analysis procedures, participant demographics, results of data analysis for the 12 research questions, and a summary.

Research Questions

The following research questions were investigated in this study:

1. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by gender?
2. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by ethnicity?
3. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by at-risk status?
4. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by first-generation status?
5. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by low-income status?
6. To what extent does overall GPA differ for first-time first-year students who took the FYS and those who did not by admittance status?
7. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by gender?
8. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by ethnicity?
9. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by at-risk status?
10. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by first-generation status?

11. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by socioeconomic status?

12. To what extent does one-year retention differ for first-time first-year students who took the FYS and those who did not by admittance status?

Data Analysis Procedures

Frequency distributions were initiated in SPSS to conduct a preliminary data screening. Next, descriptive statistics were run on the variables used in this study to understand the variables descriptively and to check statistical assumptions of homogeneity of variance and normality.

A series of analysis of variance (ANOVA) tests were employed because this statistical analysis is frequently used to examine differences in group means and can provide estimated correlation ratios, or eta squared, related to group mean differences (Thompson, 2006; Vacha-Haase & Thompson, 2004). Therefore, six different two-way ANOVAs were conducted to determine the extent to which there were mean differences in GPA for first-time first-year students who took the FYS course and those who did not by (1) gender, (2) ethnicity, (3) at-risk status (developmental education), (4) first-generation status, (5) low-income status (Pell Grant recipient status), and (6) by admittance type. In cases where three or more levels of a variable were compared, a Scheffé post hoc test was conducted to determine which specific groups differed from each other.

Six chi-squared tests of independence were conducted to explore differences in the proportion of one-year retention among first-time first-year students who took the FYS and those who did not by (1) gender, (2) ethnicity, (3) at-risk status (developmental

education), (4) first-generation status, (5) low-income status (Pell Grant recipient status), and (6) by admittance type. The chi-squared statistic is frequently suggested by researchers to determine to what extent statistically significant associations exist between categorical variables (Huck, 2012), and in this study, associations between specific categorical variables and one-year student retention results are presented. In cases where one-year retention differences were not statistically significant, patterns in results were examined across groups.

Participant Demographics

The fall of 2014 entering first-time freshman under study were 2,535 full and part-time students enrolled at one university. Participant demographics were (a) 64.3% female, and (b) 35.7% male. Participant ethnicity percentages were: (a) 24.3% Black; (b) 23.8% Hispanic; (c) 44.2% White students; and (d) 7.7% of Other ethnicities. The number of students enrolled in at least one developmental education class (the at-risk variable) were 328 (12.9%), and 486 students (19.2%) reported first-generation status. A total of 592 or 23.3% of first-time freshmen students participated in a first-year seminar.

A comprehensive view of entering student SAT scores by gender, ethnicity, and first-year seminar participation can be viewed in Table 5. When analyzing these results, it is suggested that researchers keep in mind the national benchmark score predicted to earn a B- (2.66) or better in the first-year of college on the SAT was 1550 (College Board, 2014a). SAT and ACT scores were initially rescaled to *z* scores to compare college entrance exam results. This transformation was performed to allow students, regardless of which test they had taken, to have their relative standing based on those scores compared. All students in the sample took the SAT examination (i.e., there was no missing data) and

only some took the ACT examination. After reviewing the *z* scores for both the SAT and ACT, in every case participants scored higher on the SAT; and thus, the SAT score was used for analyses.

Pairwise means tests were conducted and mean SAT scores were compared by student demographics. Table 5 displays the mean scores by gender and ethnicity for seminar and non-seminar participants. Apart from Black students, mean SAT scores were lower for students who participated in a first-year seminar course. Also of note was the statistically significantly lower mean SAT scores for White students who took the first-year seminar compared to White students who did not take the course.

Table 5

Mean SAT Scores by Gender, Ethnicity, and First-Year Seminar Participation

Category	Mean SAT for FYS Participants	Mean SAT No FYS
All Male	1077.7	1093.7
All Female	1030.0	1055.0
All Black	1008.2	994.3
Black Male	1055.6	1022.9
Black Female	990.0	979.0
Hispanic	1024.6	1036.3
Hispanic Male	1038.1	1065.1
Hispanic Female	1018.2	1018.2
White	1085.6*	1120.3
White Male	1108.4*	1139.0
White Female	1070.8*	1109.7

Note: Pairwise means tests were conducted. * denotes a statistically significantly lower mean SAT score for White students who took the FYS when compared to White students who did not take the course.

Results

Research Questions 1-6: GPA outcomes by variable groups. The first six research questions focused on the differences in GPA outcomes by variable groups and as influenced by the interaction with these variables groups and participation in a first-year seminar (FYS) course. Two-way ANOVAs were conducted to compare the effects of first-year seminar participation on GPA outcomes by (1) gender, (2) ethnicity, (3) at-risk status, (4) first-generation status, (5) low-income status, and (6) admittance type. Researchers recognize that ANOVA assumptions are never perfectly met in practice. The question is then "whether assumptions are sufficiently well met that reasonable confidence can be vested in the ANOVA statistics" (Skidmore & Thompson, 2013, p. 536). In the presence of balanced designs, researchers can be reasonably confident that ANOVA is fairly robust to assumption violations (Glass, Peckham, & Sanders, 1972); however, unbalanced designs are more common than balanced designs (Keselman et al., 1998). When there are an unequal number of groups in the presence of assumption violations, the recommendation has been to use alternative procedures (Harwell, Rubinstein, Hayes, & Olds, 1992). In the presence of heterogeneity of variance, the Welch is recommended (Harwell et al., 1992). In the presence of non-normality, Kruskal-Wallis is preferred (Harwell et al., 1992). Although ANOVA results are presented, the suggested alternative test results are also presented when assumptions were violated. In such cases, a comparison of the interpretation resulting from each of the tests is offered so that the interpretation is not an artifact of the analytical approach used.

GPA, gender, and FYS: Research Question 1. The assumption of data normality was examined for GPA by gender before the ANOVA test was applied. The skewness and kurtosis values of a normal distribution are expected to be zero (Kim, 2013). Descriptive statistics revealed standardized skewness for females was -6.43 and standardized skewness for males was -0.24. Standardized kurtosis for females was -11.79 and standardized kurtosis for males was 4.69. The standardized skewness for those who took FYS was - 5.51 and the standardized skewness those who did not take FYS was -12.69. The standardized kurtosis for those who took FYS was 0.32 and standardized kurtosis for those who did not take FYS was 3.74. These results indicated that the data did not fall within acceptable limits of ± 3.0 for skewness (Tabachnick & Fidell, 2007), and ±2 for kurtosis (George & Mallery, 2010). A Levene's test was conducted to test for homogeneity of variance. Homogeneity of variance is desired and assumes no differences in the variances between the groups when statistical significant differences are not observed, that is, when the *p*-value is greater than .05. Homogeneity of variance was not present across the groups tested ($p < .01$) and therefore results should be interpreted with caution. Descriptively, the standard deviations were quite similar between males (n = 837) and females (n = 1,495) and FYS (n = 553) and non-FYS (n = 1,779) students, but because the group sizes were disparate, these differences likely accounted for the lack of homogeneity of variance observed. The main effect of the mean GPA for the 1,495 females ($M = 2.91$, $SD = 0.69$) was statistically significantly higher than the mean GPA for the 837 males ($M = 2.65$, $SD = 0.79$), $F(1, 2328) = 46.72$, $p < .01$, $\eta^2 = .02$. The effect size suggested that 2.0 % of the variance in GPA was explained by gender. Because GPA was not normally distributed by gender, a Kruskal-Wallis H test was run to compare the

nonparametric test results to the parametric test results. The Kruskal-Wallis H test result, $H(1) = 55.49$, $p < .01$, also revealed a statistically significant difference in GPA by gender. Due to the presence of heterogeneity of variance, a Welch test was also conducted and the results ($p < .01$) corroborated the statistically significantly higher main effect of GPA for female students. The overall main effect for the FYS course was not statistically significant, $F(1, 2328) = 0.29$, $p = .59$, $\eta^2 = .00$. As noted previously, GPA was not normally distributed by FYS, which necessitated the use of a non-parametric test to insure the parametric results led to the same conclusion as the nonparametric test. Therefore, the Kruskal-Wallis H test was run, $H(1) = .52$, $p = .47$, which resulted in the same interpretation, a statistically non-significant result. Again, because heterogeneity of variance was also violated, a Welch test was run and resulted in the same conclusion as the parametric ANOVA, a non-statistically significant result for GPA differences by FYS. Additionally, there was no statistically significant difference in mean GPA when the gender and FYS interaction was examined, $F(1, 2328) = 0.01$, $p = .94$, $\eta^2 = .00$.

GPA, ethnicity, and FYS: Research Question 2. Descriptive statistics revealed standardized skewness for Black, Hispanic, and White students were -5.63, -6.60, and -12.00; respectively. Standardized kurtosis was 0.61 for Black, 2.84 for Hispanic, and 5.53 for White students. Ethnicity data distributions were non-normal; and therefore, a Kruskal-Wallis H test was run to account for this assumption violation. A Levene's test was completed to test the homogeneity of variance for the groups being compared. The Levene's test resulted in a $p = .55$ and therefore no statistically significant difference in variance among the groups was present. The main effect for mean differences in GPA by ethnicity were statistically significant, $F(2, 2150) = 19.68$, $p < .01$, $\eta^2 = .02$. This effect

size explained 2.0% of the difference in GPA by ethnicity. The Kruskal-Wallis H test result, $H(2) = 92.83$, $p < .01$, revealed the same interpretation as the parametric ANOVA test—statistically significant differences in GPA by ethnicity. Although the main effect of the FYS course was not statistically significant: $F(1, 2150) = 0.96$, $p = .33$, $\eta^2 = .00$, the interaction between GPA, ethnicity, and FYS participation was statistically significant, $F(2, 2150) = 5.89$, $p < .01$, $\eta^2 = .01$. A Scheffé post hoc test revealed that Black students who took the FYS course versus those who did not ($M = 2.73$, $SD = 0.68$ vs. $M = 2.60$, $SD = 0.73$), and Hispanic students who took the FYS course versus those who did not ($M = 2.82$, $SD = 0.70$ vs. $M = 2.71$, $SD = 0.74$), had statistically significantly higher GPAs ($p < .01$). There were no statistically significant differences in GPA among White students who took the FYS course. Figure 2 depicts the results of the interaction between GPA, ethnicity and participation the FYS course. Overall, White students had higher GPAs ($M = 2.96$, $SD = 0.72$) than did Black ($M = 2.64$, $SD = 0.72$) or Hispanic ($M = 2.74$, $SD = 0.73$) students in this cohort.

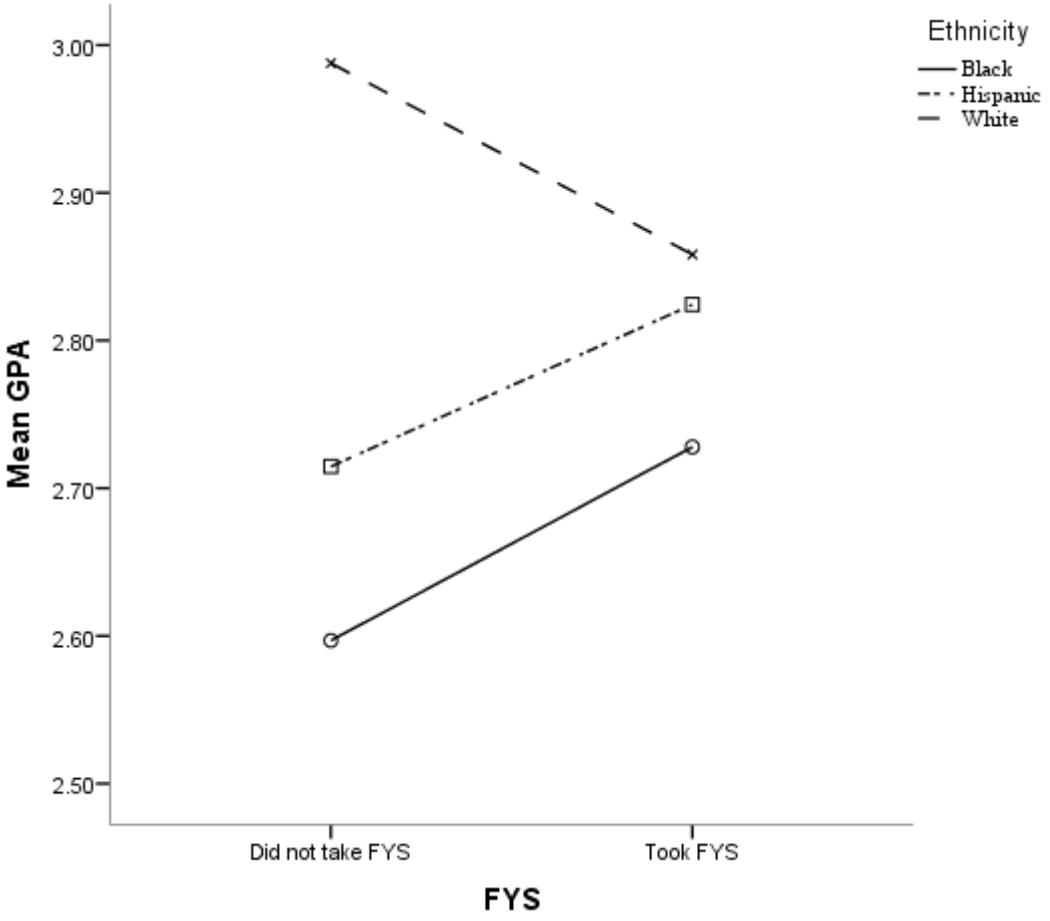

Figure 2. GPA means by ethnicity and FYS participation.

GPA, at-risk students, and FYS: Research Question 3. Standardized skewness for at-risk students, those who took at least one developmental education course, was -1.12, and standardized skewness for students not taking any developmental courses was -14.95. Standardized kurtosis for at-risk students was -0.88, and 6.03 for students not taking developmental courses. This result means that the data for the at-risk students was normally distributed, but the data were not normally distributed for those who did not take developmental education courses. Levene's test of homogeneity revealed that there were no statistically significant differences in variances among these groups (p = .77). Overall, students who took at least one developmental English or mathematics course (n

= 295) in the fall semester of 2014 had statistically significantly lower GPA's (M = 2.46, SD = 0.70) than their cohort peers (M = 2.87, SD = 0.73), $F(1, 2328) = 47.88$, $p < .01$, $\eta^2 = .02$. However, because normality was violated the nonparametric Kruskal-Wallis test was run, $H(1) = 91.61$, $p < .01$, resulting in the same conclusion as its parametric counterpart. The main effect of the FYS course was not statistically significant: $F(1, 2328) = 2.14$, $p = .14$, $\eta^2 = .00$. Of interest is the interaction of at-risk students who took the FYS course in that they had statistically significantly higher GPAs (M = 2.59, SD = 0.68) than at-risk students who did not take the FYS course (M = 2.41, SD = 0.69): $F(1, 2328) = 4.75$, $p = .03$, $\eta^2 = .00$. Although this result was statistically significant, 0.0% of the GPA difference for students taking at least one developmental education course was explained by the interaction of participation in the FYS course and at-risk status. Figure 3 illustrates the comparison of GPA means and FYS participation for students who were in and not in developmental education courses.

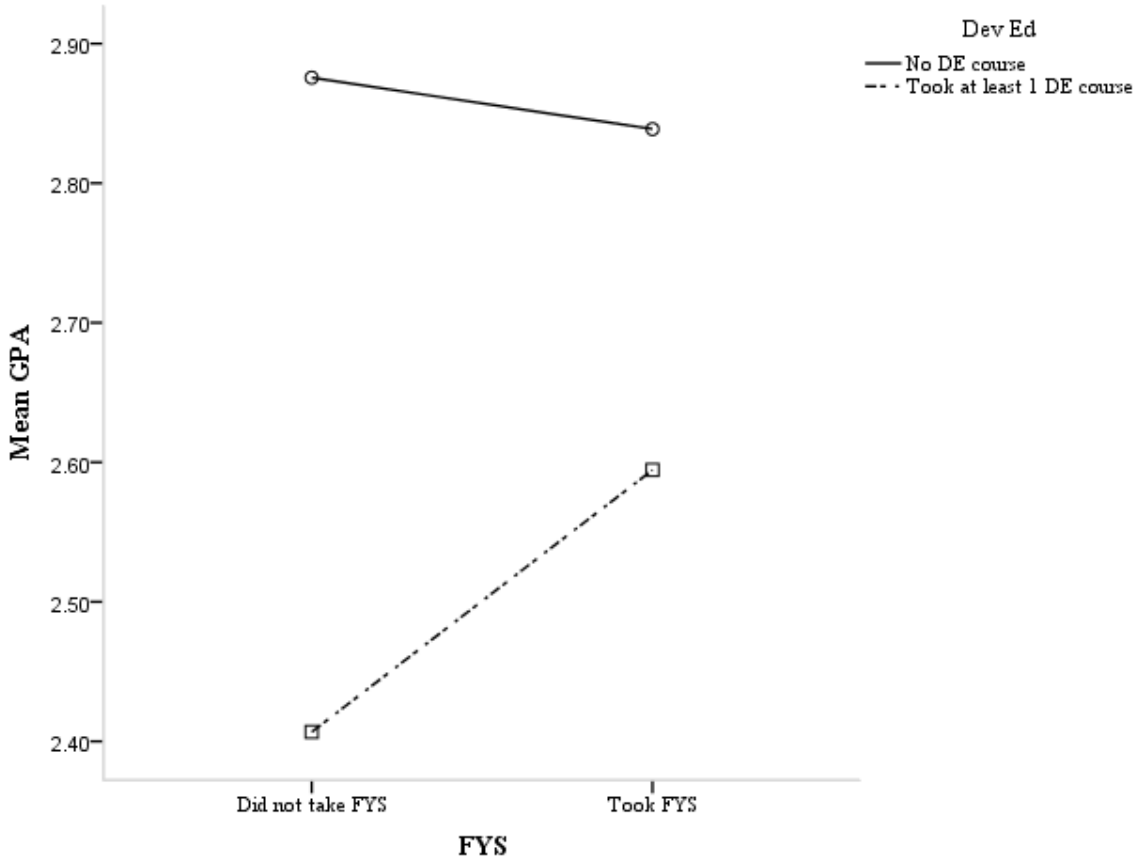

Figure 3. GPA means comparison: Students in developmental education and FYS participation.

GPA, first-generation students, and FYS: Research Question 4. Standardized skewness for first-generation students was -6.35, and standardized skewness for non-first-generation students was -12.21. Standardized kurtosis for first-generation students was 2.48 and 4.44 for non-first-generation students. The data were non-normal for this group. Levene's test of homogeneity for this comparison revealed that the variance of the dependent GPA variable ($p = .47$) was equal across student groups. Mean differences in GPA revealed in the ANOVA test for first-generation students ($n = 445$) were not statistically significantly different compared to their non-first generation cohort peers ($n = 1,451$): $F(1, 1892) = 0.42$, $p = .52$, $\eta^2 < .00$. The nonparametric Kruskal-Wallis test

was run considering the aforementioned severe normality assumption violation, $H(1) = 13.34$, $p < .01$. These results differed from the results of its parametric counterpart. Because the Kruskal-Wallis test examines ranks rather than means across groups, and therefore does not assume a normal distribution, the results of the Kruskal-Wallis, rather than the ANOVA are to be trusted. Thus, a statistically significant difference in GPA was present across first-generation and non-first-generation students. On the other hand, the main effect of the FYS course was not statistically significant, $F(1, 1892) = 3.15$, $p = .08$, $\eta^2 < .00$. However, interaction results revealed that first-generation students who took the FYS course had statistically significantly higher GPA scores ($M = 2.96$, $SD = 0.66$), than first-generation students who did not take the FYS course ($M = 2.69$, $SD = 0.74$): $F(1, 1892) = 13.67$, $p < .01$, $\eta^2 = .01$. Thus, the interaction between FYS course participation and first-generation status explained 1.0% of the variance in GPA. Figure 4 illustrates the GPA differences among first-generation students and non-first-generation students, and the statistically significant GPA improvement for first-generation students who took the FYS course.

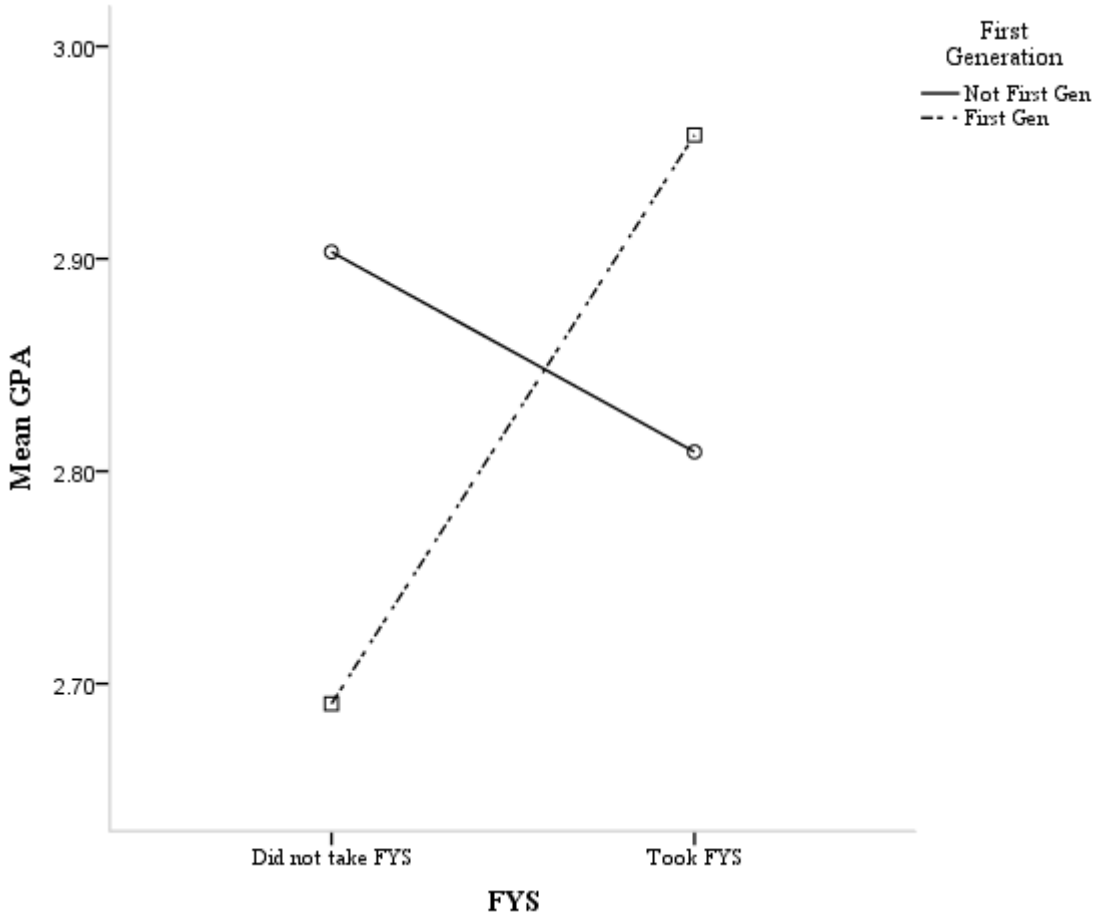

Figure 4. GPA differences among first-generation students, peers, and FYS participation.

GPA, low-income students, and FYS: Research Question 5. Standardized skewness for low-income students was -8.48, and standardized skewness for non-low-income students was -11.50. Standardized kurtosis for low-income students was 1.50, and 4.23 for non-low-income students. Thus, the GPA distribution was non-normal for this low-income status group. Levene's test of homogeneity was not statistically significant; therefore, the variance ($p = .87$) was considered equal across groups. The main effect of GPA for low-income students (n = 1,174 Pell Grant recipients) was statistically significantly lower ($M = 2.74$, $SD = 0.73$) than their cohort peers ($M = 2.89$, $SD = 0.74$), $F(1, 2328) = 9.22$, $p < .01$, $\eta^2 = .00$. Similarly, the nonparametric Kruskal-Wallis test

results provided statistically significant differences by Pell Grant status, H(1) = 32.56, $p < .01$. Overall, FYS participation was not statistically significant, $F(1, 2328) = 0.17$, $p = .69$, $\eta^2 = .00$. Of note is that low-income students who took the FYS course ($n = 280$) had statistically significantly higher GPA's ($M = 2.80$, $SD = 0.73$) than low-income students ($n = 894$) who did not take the FYS course ($M = 2.72$, $SD = 0.72$), $F(1, 2328) = 6.60$, $p = .01$, $\eta^2 = .00$. Figure 5 displays the comparisons of GPA, low-income, and the influence of the FYS course. Moreover, only 0.3% of the variance was explained by participation in the FYS course.

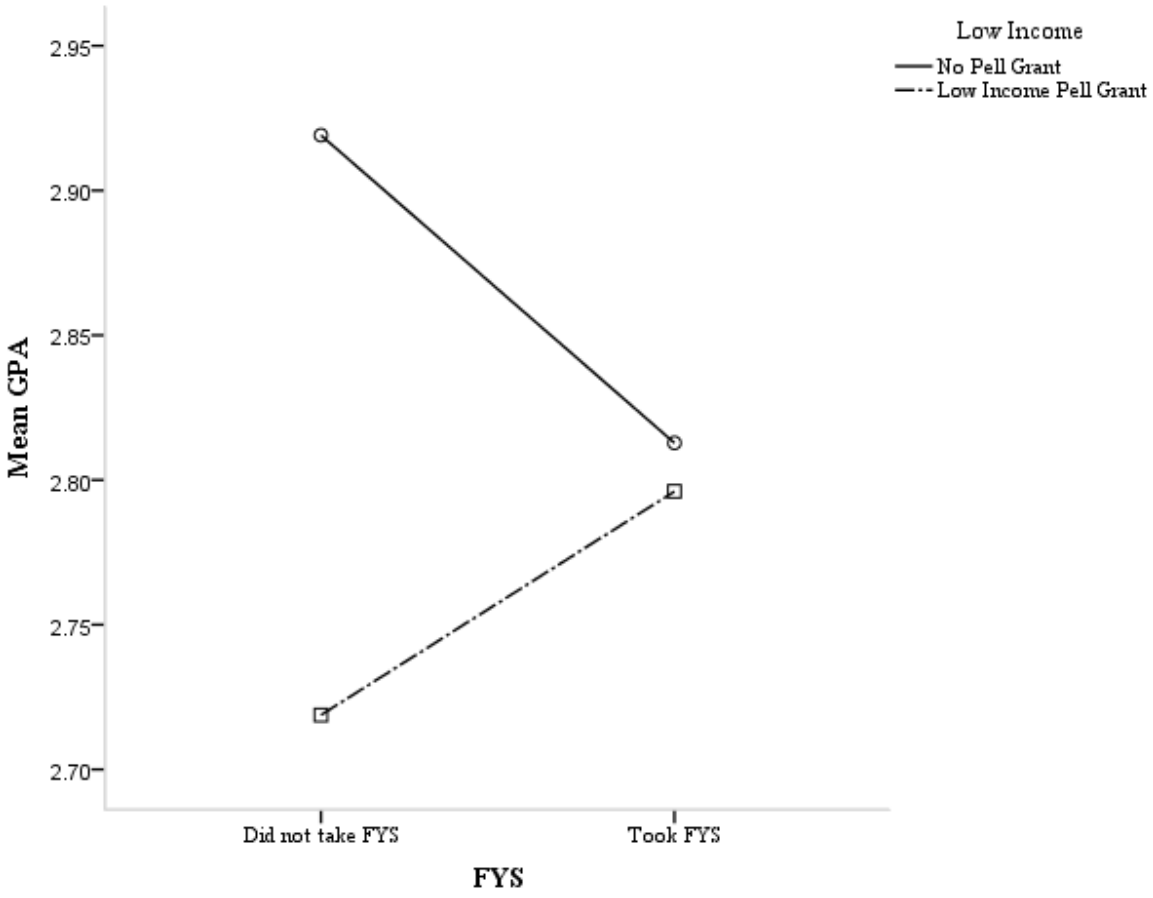

Figure 5. GPA and FYS participation for low-income students.

GPA, admittance type, and FYS: Research Question 6. Standardized skewness for admittance types were: college credit = -6.96, regular = -11.30, conditionally admitted = -4.55, other = -0.84. Standardized kurtosis for admittance types were: college credit = 2.50, regular = -2.78, conditionally admitted = 0.88, other = -0.25. The data were non-normal for all groups except the "other" designated group. Levene's test of homogeneity was statistically significant ($p = .03$); therefore, the variance was not equal across all groups. An ANOVA compared the mean student GPA by admittance type (college credit, regular, conditional admittance and other) and the interaction with FYS course participation. The GPA main effect for these three admittance types was statistically significant: $F(3, 2324) = 4.91$, $p < .01$, $\eta^2 = .01$. Similarly, the Kruskal-Wallis test, the nonparametric alternative to the ANOVA, also resulted in the same conclusion—statistically significant differences in GPA by admittance type $H(3) = 63.78$, $p < .01$. Due to the heterogeneity of variance, a Welch test was also conducted and results ($p < .01$) corroborated the statistically significant main effect for admittance type. Conversely, the main effect for the FYS course was not statistically significant, $F(1, 2324) = 3.31$, $p = .07$, $\eta^2 = .00$. Further, the overall interaction between the admittance type and the FYS course was not statistically significant: $F(3, 2324) = 1.47$, $p = .22$, $\eta^2 = .00$. A Scheffé post hoc test revealed that GPA by admittance type was statistically significant for those entering with college credit ($n = 450$). Specifically, the observation with admittance type was that regardless of FYS participation, students were statistically significantly different on GPA outcomes. Specifically, the college credit group was statistically significantly higher from all the other groups (regular, conditional admittance, and other). Table 6

contains information that compares GPA outcomes by student admittance type and FYS participation.

Table 6

Comparison of GPA outcomes by Student Admissions Type and First-Year Seminar Participation

Admissions Status	*n*	Percent	Mean GPA Without the FYS	Mean GPA with the FYS
Entered with College Credit (CR)	450	19.3	3.01 (*SD* = 0.04)	3.04 (*SD* = 0.09)
Regular admittance (no CR)	1545	66.3	2.78 (*SD* = 0.02)	2.98 (*SD* = 0.51)
Conditional Admittance (PREP)	288	12.3	2.65 (SD = 0.20)	2.61 (*SD* = 0.04)
Other	49	2.1	2.52 (*SD* = 0.11)	3.04 (*SD* = 0.30)

Note. * = Regardless of FYS participation, the college credit group had a statistically significantly higher GPA.

Research Questions 7-12: FYS and One-Year Retention Outcomes. A chi-squared test was applied to compare one-year retention rates of students participating in the FYS course and students not participating in the FYS course. The chi-squared test was the selected statistic because both the multiple independent variables (FYS participation by student group) and the dependent variable of interest (one-year retention), consisted of categorical (nominal) level data (Huck, 2012; Johnson & Christensen, 2008). One-year retention rates and FYS course participation were next compared by; (1) gender, (2) ethnicity, (3) at-risk status, (4) first-generation status, (5) low-income status, and (6) admittance type.

One-year retention, gender, and FYS: Research Question 7. The seventh research question for this study focused on differences in one-year retention rates for FYS participants by gender. The chi-squared test for one-year retention rates for males in the sample (n = 905) were statistically significantly higher for the 210 males who participated in the FYS course (82.1%) than for the 695 males who did not take the FYS course (75.3%), $\chi^2(1) = 4.06$, $p = .04$, V = .07. The chi-squared test for female students in the sample (n = 1,630) compared one-year retention percentages for 390 students who took the FYS course (83.1% retention) with one-year retention percentages for female students (n = 1,240) not taking the course (81.2% retention). Although higher one-year retention was realized for females who took the FYS course, it was not statistically significant, $\chi^2(1) = 0.69$, $p = .41$, V = .02.

One-year retention, ethnicity, and FYS: Research Question 8. A chi-squared test was run to determine to what extent one-year retention rate percentages differed for students who took the FYS and those who did not by ethnicity. There were 617 Black students, 602 Hispanic students and 1121 White students enrolled in the sample year of 2014. One-year retention percentages were higher for Black students who took the FYS (n = 202), 84.7% versus 82.4% for those not taking the FYS (n = 415); $\chi^2(1) = 0.47$, p = .49, V = .02. Hispanic students taking the FYS course (n = 123) were retained at 78.9% versus 77.9% for the 479 Hispanic students who did not take the course, $\chi^2(1) = .06$, p = .81, V = .01. There were 235 White students who took the FYS course and they were retained at 83.0% versus 78.9% for those (n = 886) not taking the course, $\chi^2(1) = 1.92$, p = .17, V = .04. Although these results suggest a pattern of higher retention percentages for those who took the FYS course, none were statistically significantly higher.

One-year retention, at-risk, and FYS: Research Question 9. For students who did not take developmental education courses (n = 2,207), and did take the FYS course (n = 503), one-year retention rate percentages were higher (83.1% versus 79.9%) than for students who did not take developmental education courses and did not take the FYS. Chi-squared tests revealed that these retention percentages were not statistically significantly higher: $\chi^2(1) = 2.59$, $p = .11$, V = .03. Students who did take at least one developmental education course (n = 328), and took the FYS course (n = 88), were retained at higher percentages than students in developmental education who did not take the FYS (80.7% versus 73.3%). These retention rates were not statistically significantly different; $\chi^2(1) = 1.87$, $p = .17$, V = .08.

One-year retention, first generation status, and FYS: Research Question 10. Students who did not self-identify as first-generation students (n = 1,570) were retained at statistically significantly higher percentage rates if they took the FYS course (n = 398), at 84.2% versus 79.2%, than if they did not take the FYS course: $\chi^2(1) = 4.70$, $p = .03$, V = .06. Students identifying as first-generation, where neither parent had any college experience (n = 479), were also retained at higher rates if they took the FYS course (n = 102) when compared to first-generation students who did not take the FYS (n = 377). The retention percentage comparisons were 84.6% versus 79.0%), but the difference was not statistically significant, $\chi^2(1) = 1.47$, $p = .23$, V = .06. Of note was the fact that the retention proportions were very similar for first generation and non-first-generation students taking the course, but the sample size for the first-generation FYS group was much smaller; therefore, not statistically significant.

One-year retention, low-income, and FYS: Research Question 11. Students who did not receive Pell Grants (n = 1,281), and took the FYS course (n = 293) had statistically significantly higher one-year retention rates (82.6%) than students who did not receive Pell Grants and did not take the FYS course (n = 988), retained at 77.1%, $\chi^2(1) = 3.99$, $p = .05$, V = .06. However, low-income Pell Grant recipients (n = 1,254) who took the FYS course (n = 298) had only slightly higher retention rates (82.9% versus 81.1%), than low-income Pell Grant recipients who did not take the FYS, $\chi^2(1) = 0.50$, $p = .48$, V = .02. Therefore, there was no statistically significant difference in retention for low-income students who took the FYS course versus low-income Pell Grant recipients who did not.

One-year retention, admittance type, and FYS: Research Question 12. Students classified as coming into the first-year of college with college credit (n = 480) who took the FYS course (n = 68) had higher one-year retention rates (89.7%) than those with college credit who did not take the course (n = 412), retained at 80.1%; however, this result was not statistically significantly higher, $\chi^2(1) = 3.57$, $p = .06$, V = .09. Students classified as conditionally admitted (n = 312) were all required to take the FYS course. However, 16 students did not take the course, due to reasons not known for this study. Although not statistically significant, of the 296 conditionally admitted students who took the course, 81.1% were retained compared to 62.5% retention of 16 conditionally admitted students who did not take the course, $\chi^2(1) = 3.29$, $p = .07$, V = .10. Lastly, for regularly admitted students, (n = 1,685), that is, those without college credit and not conditionally admitted, one-year retention rates were higher for students who took the FYS course (n = 221), at 82.8%, than for those who did not take the course

(79.4%). The chi-squared test revealed however, that the one-year retention for regular admittance students was not statistically significantly different from regularly admitted students who took the FYS course, $\chi^2(1) = 1.35$, $p = .25$, V = .03.

Summary

For this quantitative, nonexperimental, cross-sectional study, six research questions were evaluated utilizing statistical analyses to determine the differences between the FYS course participation, student variables, and student first-year GPA outcomes. Six additional research questions were tested utilizing a chi-squared statistical analysis to determine the relationship between the FYS course participation, student variables, and one-year retention rates. For mean (or rank) difference results that compared GPA outcomes and the statistical interactions with the FYS course, several student groups had noteworthy results. The following student groups who took the FYS course had statistically significantly higher GPA scores when compared to their peers in the same student group who did not take the FYS course: Black, Hispanic, at-risk, first-generation, and low-income variable groups for chi-squared statistical results comparing student variables and one-year retention outcomes (research questions 7-12), non-first generation students and students who did not receive Pell Grants had statistically significantly higher retention rates if they took the FYS course. In Chapter V, a discussion of the findings of this study, the relationship to the literature and to the theoretical frameworks referenced in the study will be presented. Additionally, implications for policy and recommendations for future research will be included.

CHAPTER V

Discussion, Implications, and Recommendations

Recent national data reports revealed that more people will need a postsecondary credential to be competitive in the U.S. workforce. Less than 35% of working-age Texans have a 2- or 4-year degree (Lumina Foundation, 2014), resulting in Texans being below the national average in degree attainment (Lumina Foundation, 2014). First-year seminars are a common initiative on U.S. college campuses (Young & Hopp, 2014) designed to increase academic success and to address transitional issues common to new students.

The purpose of this study was to investigate the extent to which the relationship between (a) student demographic variables (i.e., ethnicity, gender, first generation status, low-income), college admission variables (i.e., admission status, SAT/ACT scores, remediation requirements), and (b) GPA and retention were influenced by first-year seminar course participation at one Tier II doctoral university in the southwestern United States (U.S. News and World Report, 2012). Specifically examined were first-year GPA and retention outcomes and the relationship among students who took or did not take the first-year seminar course. Student demographic variables and college admission variables were similarly examined by GPA and retention. Archival data at one 4-year university in the southwestern United States were accessed. Provided in this chapter is a discussion of findings and recommendations for practitioners and researchers. Also presented are connections of results to the theoretical frameworks and to the literature, discussions of implications for practitioners and policymakers, recommendations for future research, and conclusions.

Discussion of Findings

ANOVAs were used to examine differences in GPA between students who participated in the FYS course and students who did not. Suggested alternative non-parametric tests were used when data non-normality (Kruskal-Wallis test) or heterogeneity of variance (Welch test) was present. In such cases, each of the alternative non-parametric tests yielded similar findings in all but one case. In the case of examining mean GPA differences in first-generation students, the alternate non-parametric Kruskal-Wallis test yielded statistically significant results as opposed to the ANOVA, which yielded non-statistically significant differences. Because the Kruskal-Wallis examined ranks rather than means across groups, the results of the Kruskal-Wallis were the more robust interpretation considering the assumption violation.

GPA, FYS, and variable groups. Black students who took the FYS course had statistically significantly higher GPAs than Black students who did not take the FYS course, although effect sizes were small. Similarly, Hispanic students who took the FYS course had statistically significantly higher GPAs than Hispanic students who did not take the FYS course. Additionally, at-risk, first-generation, and low-income student groups who took the FYS course had statistically significantly higher GPAs than their within group peers. Although at-risk, first-generation, and low-income student groups had statistically significantly lower GPAs than their 2014 cohort peers, when compared within each student group, at-risk, first-generation, and low income students who took the FYS course had statistically significantly higher GPA outcomes than their within group peers who did not take the FYS course. GPA comparisons by admittance type were statistically significantly higher for students designated as college credit regardless of

whether they took the FYS course. The FYS course is a graded course and as such contributed to the GPA of FYS participants. Furthermore, students who took the FYS were taught specific strategies for academic success in the FYS course, and this curriculum might have influenced the statistically significantly higher GPAs within student groups. Although higher GPA results for FYS participants were found, the small effect sizes may support Tinto's (1975) work that suggests there are many reasons to explain why some students have higher first-year GPAs.

One-year retention, FYS, and student variables. Chi -squared tests of independence were conducted to explore differences in one-year retention percentages between first-year students who took the FYS course and those who did not. The student variables of gender, ethnicity, at-risk, first generation, low-income, and admittance type were examined for possible interactions between FYS course participation and subsequent one-year retention rates within each variable group. Research Questions 7 through 12 addressed the one-year retention outcomes. Non-first-generation students and non-low-income students who took the FYS course were retained at statistically significantly higher rates than non-first-generation students and non-low-income students who did not take the FYS course. Conversely, one-year retention results by gender, ethnicity, at-risk, first-generation, low-income, and admittance type variables who took the FYS course were not statistically significantly different when compared to students within these groups who did not take the course. Interestingly, in each of these non-significant findings, a pattern of improvement in one-year retention was noted when these groups took the FYS course, even though the improvement did not meet the threshold of statistical significance. Many factors contribute to a student's decision to leave college

(Astin, 1984; Tinto, 2012). Although the FYS course has explicit curriculum that addresses academic success that could impact GPA (e.g., time management, study skills, preparing effective presentations, campus resources for academic success), one-year retention might be a concept that is not explicitly addressed in the curriculum of the FYS.

Connections to the Literature

GPA findings in the current study were mixed. In each of the cases where statistical significance was found, effect sizes were small and therefore not practically significant. These mixed results are like some recent multi-institution research findings (Permzadian & Credé, 2016). Conversely, some single institution findings suggested that students who participated in first-year seminars had statistically significantly higher GPAs (Barton & Donahue, 2009; Ben-Avie et al., 2012; Cox et al., 2005; Weissman & Magill, 2008).

Like retention findings in this study, many researchers reported a pattern of increased one-year retention with FYS participation, but retention results did not rise to the threshold of statistical significance (Barton & Donahue, 2009; Permzadian & Credé, 2016). Of note is that researchers Ben-Avie et al. (2012) and Miller, Janz, and Chen (2007) reported statistically significant higher retention rates for students who participated in the FYS course. Moreover, peer-reviewed studies reported higher GPA outcomes more often that non-peer reviewed studies (Permzadian & Credé, 2016).

Small effect sizes were present in the current study, which examined academic seminars with uniform content taught by faculty or administrative staff. In a quantitative meta-analytic literature review on first-year seminar effectiveness at both 2- and 4-year colleges and universities, Permzadian and Credé (2016) reported that first-year seminars

had a small average effect on first-year GPA (d = 0.01) and retention (d = 0.11) (p. 19). Specifically, in reviewing 89 articles on first-year seminar participation effects on GPA, findings for GPA outcomes were higher for hybrid seminars with academic content and higher for participants in seminars taught by faculty or administrative staff, rather than courses taught by or with students as instructors.

Many students who depart from college do so in the first-year, thus retention to a second-year of college is a milestone measurement of student success (Upcraft et al., 2005). In reviewing 195 articles on the effect of first-year seminars on one-year retention, higher retention outcomes were reported in studies where participants participated in extended orientation seminars, in seminars taught by faculty or administrative staff, and in seminars offered to all incoming students as opposed to only academically underprepared students. Additionally, higher retention rates were reported among students where seminars were of shorter length, in seminars at smaller institutions, and in seminars not attached to a learning community (Permzadian & Credé, 2016). In the present study, the 25 sections of the FYS course offered in the fall varied in seminar type. There were 12 stand-alone sections (not connected to other courses) and five more sections connected to other courses in a learning community that were classified as academic with uniform content seminars. This seminar type included critical thinking, information literacy, research, writing, and oral presentation skills. An additional seven sections were classified as hybrid seminar types. The hybrid seminars all included the "academic seminar with uniform content across sections" (Young & Hopp, 2014, p. 62) seminar type. Additionally, these hybrids were discipline-based and situated in a learning community, that is, they were linked to other required coursework and sometimes housed

in a common residential space. The seminars were taught by faculty or administrative staff and were offered to all incoming students.

Connections to the Theoretical Frameworks

The theoretical frameworks chosen for the current study were Tinto's (1975) theory of student departure and Astin's I-E-O model (Inputs, Environment, and Outputs), which explain why students leave college before obtaining a degree, and might guide universities in practices designed to reduce the number of students who leave. Tinto (1975) theorized that new college students experienced similar situations differently, due to differing individual student characteristics and that these different perceptions may affect their success in the college transition experience. In the current study, Black, Hispanic, at-risk, first-generation, and low-income students who took the FYS course had statistically significantly higher GPA than the group peers who did not take the course. Astin (1984) developed the I-E-O model and suggested that intentionality in how the university constructs multiple success programs can affect how students schedule their time, and thus, can affect student success. Further, examining how the FYS course may make a difference for specific populations was important (Astin, 1984, 2012; Tinto, 1998, 2012). Academic difficulty is one of the major reasons why students leave college (Tinto, 1993). Tinto (1992; 2012) suggested that longitudinal research was needed to account for the degree to which specific student population attrition occurred (e.g., within low-income, by student gender, by student ethnicity, or first-generation student populations) at single-institutions. Student departure and persistence theories are relevant in this study because the FYS course is designed to improve first-year GPA and retention to the second-year of college.

These theories guided the selection of important variables in this study (i.e., gender, ethnicity, at-risk, first-generation status, low-income status, and admittance type). First-year seminar course, as an academic and retention intervention strategy, focused on reducing first-year student departure and increasing academic success.

Recommendations for Practitioners

Recent goals outlined in the Texas Higher Education 60X30 Strategic Plan (THECB, 2015) direct that at least 60% of the Texas population ages 25-34 must have earned a postsecondary credential by 2030. Currently less than 35% of the Texas population has currently attained this goal (Lumina Foundation, 2014). As more students enroll in Texas colleges and universities, practitioners must specifically commit to institutionalized initiatives that increase degree attainment.

GPA and FYS. It is recommended that practitioners study their own institutional data to examine the FYS and the relationship between seminar types and student GPAs within their first-year student groups. Practical budget and resource considerations must be analyzed in making decisions about who should be targeted to take the FYS. Additional, considerations about the options for FYS course participation among student groups should be considered in view of current study findings. In this study, the interaction of the FYS course with the ethnicity, at-risk, first-generation, and low-income variables on GPA outcomes was statistically significantly higher with small effect sizes. Perhaps practitioners could use study results to consider who best benefits from the course.

Retention and FYS. The FYS course did not have a statistically significant impact on retention for most student groups in this study. The FYS curriculum should be

examined for connections to retention. Practitioners might consider being more intentional in including retention goals in the FYS course curriculum. Similar to student eligibility to purchase college class rings after earning enough credit hours for a junior classification, perhaps university administrators could offer special student retention recognition or special student status attainment for students attaining a certain GPA, completing the number of credit hours for sophomore status, and returning to the institution for a second year of study. Information about these incentives could be included within the FYS course curriculum.

Recommendations for Researchers

Researchers have suggested that the FYE course must focus on academic content as it relates to transitional issues, academic expectations, and introduction to new skills needed to succeed academically in the college environment (Permzadian & Credé, 2016). Further studies are needed about first-year seminar course curriculum that supports student populations revealed in this study as benefitting from the FYS (Tinto, 2012). In a longitudinal study conducted by the Social Science Research Council, researchers suggested that increases in student learning and success, as defined by GPA, were strongly associated with academic support (Arum, Roksa, & Cho, 2011). FYS curriculum could be revised to include more emphasis on academic support content.

FYS Seminar Types. Permzadian and Credé (2016) recommended that future research related to FYE courses should focus on seminar types that focus on academic content, academic expectations, and introduction to new skills needed to succeed academically in the college environment. Because of the lack of standardization of seminar model types in the research that was reviewed, it was sometimes difficult to

compare study outcomes when seminar type was nonspecific or classified as a hybrid seminar. Further research examining information about seminar types or studies that support the explanation and use of existing seminar types would facilitate a meta-synthesis of the existing literature. That is, the issue is not that researchers are not following the same seminar types; the issue is clarity of seminar types such that researchers can compare seminar outcomes and student benefits. Thus, it is recommended that as institutions study their own data to find out what type of seminar best fits positive student outcomes, they be explicit in describing seminar attributes to facilitate comparisons in the literature.

Retention and FYS. Because there was not a correlation between one-year retention and the FYS course, more information is needed to find out why students are leaving college. Departure decisions affecting one-year retention are complex. As such, researchers might consider investigating reasons why students leave. There could be research conducted about why students leave this particular institution. This information could inform the curriculum or seminar type of the FYS. Then follow-up studies could be conducted to see if those changes made a difference. Findings might inform adding explicitly incorporated retention curriculum for identified departure decisions. Future research might be expanded to include student writing samples to assess improved writing and research skills for FYS participants. This research could assess the extent to which course learning objectives are met. Further, this writing assessment would be useful to inform practitioners when making curriculum decisions or in planning academic interventions.

Conclusion

This non-experimental quantitative cross-sectional study sought to compare differences in GPA and one-year retention outcomes for students participating and not participating in a first-year seminar course during one academic year. In this chapter, the results from this study were summarized by the six research questions about FYS courses and GPA outcomes, and the six research questions about FYS courses one-year retention outcomes within student variable groups. Relationships of findings to the literature and to the theoretical frameworks were discussed. Studying student demographic variables and the resulting first-year academic performance outcomes have been used to pinpoint areas for academic interventions in postsecondary education in the past (e.g., Barnes et al., 2010; Combs et al., 2010; Conley, 2011). Similarities were noted related to GPA outcomes and a few differences in one-year retention results were presented. Implications for policy, practice, and future research were discussed. Policymakers and practitioners must continue to seek new ways to assist students in successfully attaining postsecondary education success. The FYS course should continue to be examined for effectiveness at the individual institution level for improvement in serving future diverse student populations.

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APPENDIX A

Institutional Review Board
Office of Research and Sponsored Programs
903 Bowers Blvd, Huntsville, TX 77341-2448
Phone: 936.294.4875
Fax: 936.294.3622
irb@shsu.edu
www.shsu.edu/~rgs_www/irb/

DATE: October 4, 2016
TO: Kay Angrove [Faculty Sponsor: Dr. Julie Combs]
FROM: Sam Houston State University (SHSU) IRB

PROJECT TITLE:
First-Year Seminar Course and Academic Performance: A Mediation Model [T/D]
PROTOCOL #: 2016-10-31949
SUBMISSION TYPE: INITIAL REVIEW
ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: October 4, 2016
REVIEW CATEGORY: Category 4—research involving existing, publicly available data usually has little, if any, associated risk, particularly if subject identifiers are removed from the data or specimens.

Thank you for your submission of Initial Review materials for this project.
The Sam Houston State University (SHSU) IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.
*What should investigators do when considering changes to an exempt study that could make it nonexempt?
It is the PI's responsibility to consult with the IRB whenever questions arise about whether planned changes to an exempt study might make that study nonexempt human subjects research.
In this case, please make available sufficient information to the IRB so it can make a correct determination.
If you have any questions, please contact the IRB Office at 936-294-4875 or irb@shsu.edu.
Please include your project title and protocol number in all correspondence with this committee.

Sincerely,
Donna Desforges
IRB Chair, PHSC
PHSC-IRB

VITA

Kay E. Angrove

EDUCATION

Doctoral Candidate
Educational Leadership in Higher Education
Dissertation Title: First-Year Seminar Course and Academic Performance: An Examination of Differences by Student Characteristics.
Sam Houston State University, Huntsville, Texas

Master of Education
Educational Leadership and Policy Studies
University of Texas at San Antonio

Post Baccalaureate Teacher Certification
Texas State University, San Marcos, Texas

Bachelor of Business Administration
Information Systems
University of Texas at San Antonio

PROFESSIONAL CERTIFICATIONS

Certified Principal and Teacher
Certified EQi Counselor

REFEREED PUBLICATIONS

Byers, V. T., Smith, R. N., Angrove, K. E., McAlister-Shields, L., & Onwuegbuzie, A. J. (2015). Experiences of select women doctoral students: A feminist standpoint theory perspective. *International Journal of Education*, *7*, 266-304. Retrieved from http://www.macrothink.org/journal/index.php/ije/article/view/6982/6070

Byers, V. T. et al. (2014). Survival strategies: Doctoral students' perceptions of challenges and coping methods. *International Journal of Doctoral Studies, 9,* 109-136. Retrieved from http://ijds.org/Volume9/IJDSv9p109-136Byers0384.pdf

JURIED SCHOLARLY PRESENTATIONS

Byers, V. T., Smith, R. N., Angrove, K. E., Shields, L. M., & Onwuegbuzie, A. J. (2014, April). *Experiences of Select Women Doctoral Students: A Feminist Standpoint Theory Perspective*. Paper presented at the 2014 Annual American Educational Research Association Conference, Philadelphia, Pennsylvania.

Byers, V. T., Smith, R. N., Hwang, E., Angrove, K. E., Chandler, J. I., Christian, K. M.,…Denham, M. A. (2013, June). *Survival strategies used by doctoral students: A critical dialectical pluralistic approach.* Paper presented at the 12th Annual Advances in Qualitative Methods Conference, Edmonton, Alberta, Canada.

Angrove, K. E. (2012, February). *Freshman college success courses: A measure of success.* Paper presented at the 36th Annual Southwest Educational Research Association Meeting, San Antonio, Texas.

Byers, V. T., Smith, R. N., Hwang, E., Angrove, K. E., Chandler, J. I., Christian, K. M.,…Onwuegbuzie, A. J. (2012, February). *Survival strategies: Doctoral students' perceptions of challenges and coping methods.* Paper presented at the 36th Annual Southwest Educational Research Association Meeting, San Antonio, Texas.

PROFFESIONAL MEMBERSHIPS AND AFFILIATIONS

American Educational Research Association
National Resource Center for First-Year Experience and Students in Transition
Southwest Educational Research Association