Group Differences in Motivation and Achievement Outcomes Within a First-Year Seminar

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GROUP DIFFERENCES IN MOTIVATION AND ACHIEVEMENT OUTCOMES WITHIN A FIRST-YEAR SEMINAR

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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ABSTRACT


This intervention study explored potential motivation, achievement, and gender differences among students within an existing first-year program (n = 388). This intervention program (FYE 101) was chosen because it has a diverse population and a large number of underserved students, it fosters content that is grounded in motivational research, and it has had a positive impact on increased student GPA and fall-to-fall persistence. Prior research showed that FYE 101 was effective in mitigating academic outcomes for students within the course when compared to students who did not participate, however, we do not know if it would be equally effective for all students within the course. The purpose of this study was to determine if the existing intervention was equally effective in mitigating potential differences among varying groups of underserved students within the FYE 101 course.

Unfortunately, there are a disproportionate number of students entering college who will actually complete their degree, nearly half of these students come from underrepresented backgrounds (Martinez, Sher, Krull, & Wood, 2009; Musoba, Collazo, & Placide, 2013; Shapiro et al., 2017; U.S. Department of Education, National Center for Education Statistics, 2007). We also know that attrition rates are high for
students during their first year, where nearly one in four students will leave college (Snyder, Dillow, & Hoffman, 2009; U.S. Department of Education, National Center for Education Statistics, 2004). Fortunately, one intervention designed to support incoming students is a first-year experience course, which has been effective at mobilizing students to be diligent stewards of their college experience. Furthermore, these courses have been shown to positively influence student engagement, academic achievement, and completion rates (Goodman & Pascarella, 2006; Tinto, 2006-2007). Another area that mediates student success is achievement motivation. Curricula that are grounded in motivational theories contribute to student academic success and motivation research shows that students’ perceptions and beliefs about learning influence their effort, engagement, approach to learning, and persistence (Schunk, Pintrich, & Meece, 2008). Unfortunately, research on the efficacy of motivation constructs and their benefit to specific underserved students is lacking, specifically as it relates to students enrolled in first-year experience intervention programs.

Currently at this Rocky Mountain University ($N = 13,000$), there is an effective and comprehensive FYE program (FYE 101) that focuses on intellectual, personal, and professional development, more specifically, it has constructs grounded in goal and motivation theories. This Rocky Mountain University has a diverse student population with nearly 40% of students being of ethnic minority and 40% being first-generation. FYE 101 is offered as a three-credit course that is structured over the duration of the semester. This course targets incoming freshman who have the option to self-select into the program their first semester. The smaller class sizes (25 or few students) allow instructors to foster a student-centered, autonomy-supportive learning environment. FYE
101 is a comprehensive and robust course that aims to help students improve their academic experience by focusing on essential skills needed to be successful in college.

As expected, many of the results from this study did not align with prior research. There is consistent research on the disparities among underserved students, however it is predominately limited to the context of overall performance in college and not of specific students participating in an intervention such as a first-year experience course. Therefore, finding little differences among students suggests that the FYE 101 course is effective at mitigating potential differences and disparities.

Findings from this study revealed no significant differences for underserved students in terms of motivation or self-regulation, suggesting the intervention is beneficial in mitigating negative motivational outcomes. However, there were a few significant differences in first-generation and conditionally-admitted status in terms of academic achievement. This suggests the intervention may not be able to fully mitigate the outcomes for these students. The course might still be helping these students to some degree but this cannot be concluded from the data. Findings from this study did reveal a few significant gender differences in terms motivation but overall, did not find any gender differences for self-regulation. In addition, the findings showed no significant gender differences in terms of academic achievement. This suggests that overall, the intervention is beneficial in mitigating negative motivational and achievement outcomes for both males and females.

The results from this study align with generational research and the need to explore interventions to further support first-generation and conditionally-admitted students who are enrolling at greater rates than ever before. It is important to note that previous research with first-generation and conditionally-admitted students is not in the
context of an intervention such as a first-year experience program but their overall performance in college. Historically, data show a disparity for first-generation students and achievement, and while interventions have been effective in narrowing this achievement gap, nonetheless it still exists. First-year programs attempt to support these students, however, the concerns associated with academic achievement might expand beyond the content covered in FYE courses. To better serve and retain this fast-growing population, it is noteworthy to consider tailoring classes and curriculum that address some of the salient impediments they face.
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CHAPTER I

INTRODUCTION TO THE STUDY

Now more than ever, college attrition is becoming a salient topic for student affairs practitioners, administrators, and policy makers. Of all students enrolled nationwide, approximately half of them will leave college without a degree. Higher education is a commodity and form of cultural capital, which comes with a price. Once viewed as an investment towards higher paying jobs, satisfying careers and greater civic involvement, the cost of education is now becoming a severe financial consequence, some might even say crisis. The nation’s student loan debt has now surpassed $1 trillion and of the millions of student borrowers, those who drop out are three times more likely to default on their student loan. The investment required of education goes beyond money. Students, parents and university faculty and staff exert time and effort towards college success and degree completion.

Students come to us from all different backgrounds, with different lived experiences and as student affairs practitioners, we need to ensure a culturally responsive, welcoming climate. This starts with understanding the unique differences among a diverse population of students. Students with academic pedigree are often more familiar with cultural capital and have more resources to make that transition to college a smooth one. Adversely, nearly half of enrolled students are underrepresented in some aspect, whether it be their ethnicity, SES, age, gender, or first-generation status. For a plethora of
reasons, many of these students face academic or integration challenges and unfortunately do not persist.

We also know that attrition rates are high for students during their first year, nearly one in four students will leave college during or after their freshman year (Snyder et al., 2009; U.S. Department of Education, National Center for Education Statistics, 2004). Fortunately, one intervention designed to support incoming students is some variation of a first-year experience (FYE) seminar or course. First-year courses have been around for decades and have the potential to be very effective at mobilizing students to be diligent stewards of their college experience. Some FYE courses promote constructs that are aimed at increasing self-esteem, fostering mastery learning and promoting self-regulation.

This study explored potential differences among students in an existing FYE program. Specifically, I examined whether three populations of newly enrolled, underserved students differed on three motivational outcomes, self-regulation, and achievement. In addition, I examined gender differences in terms of the same outcomes.

Statement of the Problem

Having a post-secondary degree provides many advantages and is increasingly becoming more valuable. Unfortunately, there are a disproportionate number of students entering college who will actually complete their education, many of whom share similar demographics or backgrounds.

Many Will Not Experience the Value of Education

Having a post-secondary degree provides many advantages and is increasingly becoming more valuable. Benefits to higher education include: better lifetime earnings, lower rates of unemployment, increased health and overall greater civic involvement
One important outcome of college education is to prepare students for success in their future careers, which can translate into higher salary potential. The National Center for Education Statistics (NCES) reported for all sexes and race/ethnicity, the median income increased as educational attainment increased (U.S. Department of Education, National Center for Education Statistics, 2007). Carnevale and Rose (2012) assert that those with four-year degrees were more likely to hold higher paying managerial and professional jobs than those without a degree. They also referenced the common figure of having a lifetime earning potential of $1 million more than those with just a high school diploma. Other benefits to education were marketability, employment opportunities, and sustainability. Lumina Foundation (2017) cited that while only about 40% of Americans had a postsecondary education, nearly 66% of all newly created jobs would require that degree. In the recent recession, Americans without a higher education degree accounted for four of five jobs lost (Lumina Foundation, 2017).

Today’s demand for a post-secondary education makes exploring college dropout rates even more salient. According to the U.S. Department of Education, National Center for Education Statistics (2018b), in 2010, the graduation rate for a six-year, full-time undergraduate student was 60%. This means 40% of students enrolled did not complete their degree within six years. College attrition has huge financial implications for not only the student but also for the university and our society (Millea, Wills, Elder, & Molina, 2018). Not only will students face lower earnings over their careers (Millea et al., 2018), they will likely leave college with a mount of loan debt (Carnevale & Rose, 2012). If they did not take out loans, they likely received some sort of government financial aid (grant, stipend or scholarship) to offset the tuition, which makes their education no longer
an investment but rather now, a societal debt. Carnevale and Rose (2012) points out that our country’s student debt had surpassed $1 trillion and in 2009, nine percent of borrows were in default and 35 percent of borrows under the age 30 were already delinquent.

Subpopulations are at Risk

Varying underserved populations are particularly at risk for dropping out, including first-generation students, ethnic minority students, and conditionally-admitted students.

First-generation students. First-generation students (students who neither parent holds a degree) represent a large population of enrolled students; they make up about one third of students enrolled at a four-year university (Skomsvold, 2015; Staklis & Chen, 2010). Researchers have found that first-generation students were less likely to graduate college than non-first-generation students (Huerta, Watt, & Reyes, 2013; Martinez et al., 2009). In addition, these students were less likely to complete their degree in a timely manner (Ishitani, 2003; Pascarella, Pierson, Wolniak, & Terenzini, 2004).

One possible factor is that parent educational attainment is correlated with student attrition (Engle & Tinto, 2008; Ishitani, 2006). Ishitani (2006) found that first-generation students whose parents had some college education were more likely to graduate in a timely manner than students whose parents never attended college. According the U.S. Department of Education, National Center for Education Statistics (2007), parent education is also linked to student academic outcomes and their educational experience. Additional factors that could contribute to lower attainment rates are academic preparedness, having dependents, or being full-time employed (Chen & Carroll, 2005; Mangan, 2015; Nunez & Cuccaro-Alamin, 1998) which in turn, can contribute to their
lack of social engagement and low rates of faculty and peer interaction (Engle & Tinto, 2008).

**Ethnic minority students.** The number of ethnic minority students (all races/ethnicities other than White, non-Hispanic) undergraduate students has vastly increased over the decades. Ethnic minority student enrollment nearly doubled from 17% in 1976 to 32% in 2004 (U.S. Department of Education, National Center for Education Statistics, 2007). The latest report from the U.S. Department of Education, National Center for Education Statistics (2017) indicated that in 2014, of the 17.3 million undergraduate students enrolled, approximately 7.7 million (over 44%) were ethnic minority. These trends put minority students on the trajectory of soon becoming the majority. In addition to their increased enrollment, minority students are at a greater risk of not completing college than are White students (Shapiro et al., 2017). For example, in 2010, White student graduation rates were 62% whereas Hispanic and Black student rates were 45% and 38%, respectively (Shapiro et al., 2017). One factor that could influence these rates is college readiness. The literature shows that college entrance exam scores also indicate a disparity among ethnic minority students. The percentage of minority students taking the SAT more than quadrupled in ten years, from 7% in 1996 to 31% in 2006, respectively (U.S. Department of Education, National Center for Education Statistics, 2007). The data show overall, Whites outperform all ethnicities on verbal tests and on math, they outperform all except Asian/Pacific Islander (U.S. Department of Education, National Center for Education Statistics, 2007). In addition to college readiness, being ethnic minority, first-generation, and having low SES, potentially further impede student academic success (Musoba et al., 2013).
There is an increase in first-generation and ethnic minority student enrollment (Musoba et al., 2013) and reports indicate that ethnic minority students are almost twice as likely as traditional students to leave a four-year university without a degree (Horn, 1998). The research also shows that ethnic minority and first-generation students face barriers to their academic success and are at a greater risk for dropping out (Musoba et al., 2013). As enrollment for first-generation and ethnic minority students’ increase, universities are charged with finding ways to support these students. Lumina Foundation (2017) wrote:

> When we talk about access for underserved students, it's with a focus on today’s student. These are low-income, racial and ethnic minorities, working adults, and first-generation students. The students we once called nontraditional are no longer the exception in postsecondary education . . . they are the rule. (p. 2)

**Conditionally-admitted students.** We have seen a 40% increase in overall student enrollment over the past two decades, with a surpassing 146% increase in minority undergraduate enrollment (Li, 2007). While these enrollment trends align with a nationwide effort to increase college access for underserved students; unfortunately, nearly half of these high school graduates are academically unprepared to succeed in college (ACT, 2004; Stewart & Heaney, 2013). Underrepresented students from underserved populations such as first-generation, ethnic minority, and low SES often finish high school with low GPA and/or low standardized test scores (Stewart & Heaney, 2013). Many of these high school students do not complete the academically challenging coursework required for college success and this translates to low college retention and graduation rates (Kinzie, Gonyea, Shoup, & Kuh, 2008).
In an effort to keep college accessible and better serve these students, several universities have developed admission policies that allow matriculation under a “condition admitted” status. The research on conditional admission in terms of criteria, policies, and effectiveness is relatively new and limited. Although low GPA or ACT scores typify conditionally-admitted students, they are also more likely to be first-generation, low SES, and/or ethnic minority (Stewart & Heaney, 2013).

**Gender.** Historically women have been underrepresented in education in terms of enrollment, graduation rates, and some aspects of achievement. Over the past few decades we are seeing a steady trend showing that men are disproportionately enrolling and completing college at a lower rate than women (Ewert, 2012; King, 2006). Furthermore, Adebayo (2008) reported that while female enrollment had increased over the decades, male enrollment had declined.

Today, the gender gap seems to be closing rapidly, where women have not only surpassed men in terms of enrollment but also in degree attainment. According to King (2006), women were earning the majority of undergraduate degrees and were also more likely than men to complete their four-year degree within five years. In addition, research shows that women were also pursuing and majoring in once, male-dominated disciplines (Adebayo, 2008).

We still see minor gender gaps in content areas and achievement, which align more with historical data. The U.S. Department of Education, National Center for Education Statistics (2005) reported that although more high school girls enrolled in advanced math and science course, they were still less likely to report liking the courses. This trickles into higher education where we still see women underrepresented in STEM courses (U.S. Department of Education, National Center for Education Statistics, 2005).
Research also shows a gap in higher degrees where women earn less than half of business, law, and medicine degrees (U.S. Department of Education, National Center for Education Statistics, 2005).

**Motivational Factors**

According to Brophy (2004), motivation is a “theoretical construct used to explain the initiation, direction, intensity, persistence, and quality of behavior, especially goal-directed behavior” (p. 3). There are several motivation factors that contribute to student academic success and motivation research shows that students’ perceptions and beliefs about learning influence their effort, engagement, approach to learning, and persistence (Schunk et al., 2008). The theories of motivation that are specific to this study are goal orientation, self-efficacy and transformative experience. Goal orientation theory encompasses one’s goals, beliefs, attitudes and ultimately, purpose towards engaging in an academic activity (Ames, 1992). Specifically, mastery goal orientation is associated with adaptive means of learning and positive academic performance (Ames & Archer, 1988; Midgley, Kaplan, & Middleton, 2001). According to Bandura (1994) self-efficacy encompasses the belief that one has the ability to influence outcomes by exerting personal control. Perceived high levels of self-efficacy can influence levels of motivation and effort in an academic setting (Bandura, 1994, 2006; Zajacova, Lynch, & Espenshade, 2005). Transformative experience theory focuses on engagement in course content extending beyond the classroom and how such engagement supports a deeper and more enduring understanding of school content (Pugh, 2011; Pugh, Bergstrom, & Spencer, 2017). A self-regulated learning perspective encompasses the idea that students are active participants in their learning process and construct their own meaning and strategies (Pintrich, 2004; Zimmerman & Schunk, 2011). Zimmerman and Schunk (2011) posit that
students’ metacognitive strategies in terms of their self-perceptions and regulation processes are key factors in academic success.

Motivational theories are well researched and shown to have great influence in academic settings. Many FYE seminars explicitly focus on teaching students about motivation and increasing their positive motivation patterns. Jessup-Anger (2011) assert:

The role of a first-year seminar in setting a foundation for motivation is critical, as it may determine students’ willingness to commit to engaging in their academic work (Boyer Commission on Educating Undergraduates in the Research University, 1998) and ultimately may be the difference between students redoubling their efforts in the face of adversity or leaving school. (p. 102)

Other factors, such as development of study strategies, are additional positive outcomes of FYE courses and means by which FYE courses may increase achievement and persistence. However, an investigation of all factors is beyond the scope of the current study. The current study focused on motivation constructs and self-regulation as outcomes of an FYE course as well as the basic outcomes of achievement and persistence.

**First-Year Experience Courses as a Solution**

One effective institutional factor aimed at increasing student outcomes and success is a quality first-year experience class (Tinto, 2006-2007). Jamelske (2009) found that these learning communities had positive impacts on GPA and retention rates. Historically, universities nationwide have implemented first-year experience (FYE) programs, which typically target incoming traditional freshmen students coming directly from high school. Currently FYE courses are offered at nearly 95% of four-year universities (Jamelske, 2009). Research shows FYE has a positive impact on student
GPA, retention, student engagement and overall higher level of satisfaction (Alexander & Gardner, 2009; Goodman & Pascarella, 2006).

Acclimation to the first year of college is crucial to student success. Gerdes and Mallinckrodt (1994) found that elements of academic adjustment such as clear sense of purpose and motivation to learn were key to student retention. One way that FYE courses aim to increase persistence and achievement is by improving student motivation to learn (Jessup-Anger, 2011).

**Significance of the Study**

Although FYE courses are offered at most universities and are quite effective at improving academic outcomes, gaps in the literature still exists. Research is lacking on whether FYE courses are differentially effective for different groups of students within the course. In addition, prior research on underserved student outcomes has been limited to the context of overall college performance and has not looked at potential differences within an intervention such as an FYE course.

Underrepresented students may have slightly different needs and FYE programming to serve these students is less researched (Musoba et al., 2013). Most of the literature on the specific needs of underrepresented students in their first year is based in predominantly White institutions (Musoba et al., 2013), which have less diverse student enrollment. Given the effectiveness of FYE programs for traditional students, it appears likely that an FYE program would substantially benefit students who are at a greater risk for dropping out. My study explored whether an FYE course was deferentially effective for different groups of students in terms of motivational change, achievement, and persistence.
Current Study

Currently at this Rocky Mountain University \((N = 13,000)\) there is an effective and comprehensive FYE program (FYE 101) that focuses on intellectual, personal and professional development (Jenkins-Guarnieri, Horne, Wallis, Rings, & Vaughan, 2014-15). FYE 101 is offered as a three-credit course, is open to all students, and is structured over the course of a semester. The results show the course has a positive impact on student GPA and fall-to-fall persistence (Jenkins-Guarnieri et al., 2014-15).

Prior research shows that FYE 101 is effective at mitigating academic outcomes for students within the course when compared to students who do not participate, however we do not know if it is equally effective for all students within the course. The purpose of this study was to determine if the existing intervention was equally effective in mitigating potential differences among varying groups of underserved students within the FYE 101 course. Specifically, I examined whether three populations of newly enrolled, underserved students differed on three motivational outcomes, self-regulation, and achievement. In addition, I examined potential gender differences in terms of the same outcomes.

To increase the validity of such comparisons, I controlled for individual factors (initial levels of motivation and self-regulation, gender, and prior achievement in the form of index scores). Due to the nested nature of the data (students within classrooms), I also controlled for classroom level factors. Specifically, the level-two class variables selected were teacher experience, class type, and percentage of first-generation/ethnicity composition. For teacher experience I captured whether the instructor is new to teaching FYE 101 or if they have taught it previously. For class type, I was interested in whether this FYE 101 section was specialized (honors status, business, or CHE/TRiO) or if it was
of a normal (random and mixed freshman student composition). I was also interested in
the combination of first-generation and ethnicity composition in each section.

The results from this study helped to answer the following overarching question:
Is the FYE 101 course effective in mitigating gender differences and differences between
underserved students (first-generation, ethnic minority, and conditionally-admitted) and
non-underserved students? My specific research questions are:

Q1 Controlling for initial levels of motivation, gender, and class-level
covariates (instructor experience, class type, percent first-generation/
ethnicity composition), are there differences among underserved student
populations (first-generation, ethnic minority, and conditionally-admitted)
in levels of motivation and self-regulation at the end of the semester?

Q1a Controlling for initial levels of goal orientation, gender, and class-
level covariates, are there differences by subpopulations in levels
of goal orientation at the end of the semester?

Q1b Controlling for initial levels of self-efficacy, gender, and class-
level covariates, are there differences by subpopulations in levels
of self-efficacy at the end of the semester?

Q1c Controlling for initial levels of transformative experience, gender,
and class-level covariates, are there differences by subpopulations
in levels of transformative experience at the end of the semester?

Q1d Controlling for initial levels of self-regulation, gender, and class-
level covariates, are there differences by subpopulations in levels
of self-regulation at the end of the semester?

Q2 Controlling for initial levels of motivation and class-level covariates
(instructor experience, class type, percent of first-generation/ethnicity
composition) are there gender differences in levels of motivation and self-
regulation at the end of the semester?

Q2a Controlling for initial levels of goal orientation, and class-level
covariates, are there gender differences in levels of goal orientation
at the end of the semester?

Q2b Controlling for initial levels of self-efficacy and class-level
covariates, are there gender differences in levels of self-efficacy at
the end of the semester?
Q2c Controlling for initial levels of transformative experience and class-level covariates, are there gender differences in levels of transformative experience at the end of the semester?

Q2d Controlling for initial levels of self-regulation and class-level covariates, are there gender differences in levels of self-regulation at the end of the semester?

Q3 Controlling for prior achievement (index score), gender, and class-level covariates (instructor experience, class type, percent first-generation/ethnicity composition) are there differences in end-of-semester GPA among underserved student populations (first-generation, ethnic minority, and conditionally-admitted)?

Q4 Controlling for prior achievement (index score) and class-level covariates (instructor experience, class type, percent first-generation/ethnicity composition) are there gender differences in end-of-semester GPA?

Q5 Controlling for prior achievement (index score), gender, and class-level covariates (instructor experience, class type, percent first-generation/ethnicity composition), are there differences in persistence (next semester enrollment) among underserved student populations (first-generation status, ethnic minority, and conditionally-admitted)?

Q6 Controlling for prior achievement (index score) and class-level covariates (instructor experience, class type, percent first-generation/ethnicity composition) are there gender differences in persistence (next semester enrollment)?
Definition of Terms

_Achievement_. Fall semester GPA.

_Center for Human Enrichment (CHE)/TRiO_. A university program that supports first-generation students.

_Class type_. The class is either a normal (random and mixed freshman student composition) or specialized (composed of all CHE/TRiO students, honor students, or Business majors).

_Conditionally-admitted student_. A student who meets the current university criteria of an index score below 94.

_Ethnic minority student_. A student who identifies as any race other than White, non-Hispanic.

_First-generation student_. A student who does not have a parent who completed a college degree.

_Index score_. A state-calculated score (using high school GPA and ACT/SAT score) that receiving institutions use to determine admission and assess academic preparedness.

_Instructor experience_. The instructor either has or does not have previous experience teaching FYE 101.

_Persistence_. Enrollment into the next (spring) semester.

_Underserved student_. A student that is either first-generation, ethnic minority, or conditionally-admitted.
**Summary**

In an effort to better equip students for success, FYE courses are offered at most universities nationwide and have been quite effective at increasing academic outcomes. Many newly-enrolled students are coming to us from underrepresented backgrounds and likely face unique impediments to achievement. This study explored an existing FYE course to determine if it was differentially or more effective for students of underrepresented groups in terms of motivation, achievement, and persistence.
CHAPTER II

REVIEW OF THE LITERATURE

In this chapter, I review research relevant to the motivation, achievement, and persistence of underserved students and the role that FYE courses may play in supporting such students. Because motivation has been defined in many different ways, I start with a review of the motivation constructs targeted in this research. Next, I present information on three underrepresented groups: (a) first-generation students, (b) ethnic minority students, and (c) conditionally-admitted students. In doing so, I review existing research on motivation, achievement, and persistence among these groups. Then I address gender differences as related to motivation, achievement and persistence. Although neither male nor female students are clearly an underserved population, there is some concern that male students are more at risk. Finally, I review literature on FYE courses and their effectiveness as supporting motivation, achievement, and persistence.

Motivational Factors

Student achievement motivation has been explored using a variety of motivational perspectives that explore beliefs, achievement value, goals and interest (Ames & Archer, 1988; Dweck & Elliott, 1983; Pintrich & Schunk, 2002; Schunk et al., 2008). There are several motivational factors that contribute to student academic success and motivation research shows that students’ perceptions and beliefs about learning influence their effort, engagement, approach to learning, and persistence (Pintrich & Schunk, 2002; Schunk et
al., 2008). Among the domain of achievement motivation, I have chosen to focus specifically on goal orientation, self-efficacy, and transformative experience.

**Goal Orientation**

Goal orientation theory encompasses one’s goals, beliefs, attitudes and ultimately, purpose towards engaging in an academic activity (Ames, 1992). Achievement goal theory aims to understand adaptive and maladaptive student responses to academic challenges and embodies two primary goals, mastery and performance (Dweck, 1986). The $2 \times 2$ achievement goal framework utilizes a crossing of performance-mastery and approach-avoidance orientations (Elliot & McGregor, 2001). While the primary orientations in the four-factor model include: performance-approach, performance-avoidance, mastery-approach, and mastery-avoidance (Elliot & McGregor, 2001). I will be using the three-factor model, which excludes mastery-avoidance because this aligns with much of the existing research (Elliot & Church, 1997).

The main tenant behind performance-approach orientation is the desire outperform others and to look good or gain positive judgments (Senko & Harackiewicz, 2002). Some research suggests that performance-approach orientations might be maladaptive towards learning, suggesting there is a link with maladaptive factors such as self-handicapping, low persistence, and challenge avoidance (Midgley et al., 2001). However, Harackiewicz, Barron, Pintrich, Elliot, and Thrash (2002) counter this notion, positing that this orientation can be effective in helping motivate students to achieve higher grades. They propose we move away from the dichotomous model of mastery and performance to a more dynamic, multiple goal perspective (Harackiewicz et al., 2002). There is extensive debate around the value of performance-approach goals that goes beyond the scope of this paper (Harackiewicz et al., 2002; Midgley et al., 2001; Senko,
Hulleman, & Harackiewicz, 2011; Senko & Tropiano, 2016). However, it is important to point out that as mentioned above, performance approach goals have been defined in terms of appearance or outperformance of others and these different definitions are associated with different measures and, to some degree, get different results (Senko et al., 2011). For this study I am adopting the appearance definition, which aligns with the patterns of adaptive learning scales (PALS) goal orientation scale (Midgley et al., 2000).

Performance-avoidance approach holds the idea that a person is motivated by not looking bad or inferior to others (Elliot & Church, 1997). A student with a performance-avoid orientation might not exert as much effort on a difficult task for fear that they may receive negative judgment if they failed while putting forth much effort (Elliot & Church, 1997). Research has shown that performance-avoidance orientation can hinder effective learning and can be a predictor of poor academic achievement (Elliot, 1999; Linnenbrink & Pintrich, 2002).

Mastery orientation differs from performance in the sense that one wants to master the content. Someone with a mastery orientation is concerned with increasing knowledge, skill, and competence (Senko & Harackiewicz, 2002), they are not as focused on looking good or the appearance of failing. Much of the research shows that mastery goal orientation is linked with several positive outcomes such as academic achievement, use of self-regulated learning strategies, and more thorough understanding of the material (Ames, 1992; Elliot & Harackiewicz, 1996; Senko & Harackiewicz, 2002; Hsieh, Sullivan, & Guerra, 2007). However, the link to achievement has been inconsistent and relatively weak (Linnenbrink-Garcia, Tyson, & Patall, 2008; Senko et al., 2011).

**Relevance to current study.** While some FYE courses promote curriculum that help students develop or cultivate a mastery goal orientation, not all do. The particular
FYE program I studied (FYE 101) helps students understand their personal achievement motivation or goal orientation in a pragmatic way; however, there is a little literature on the levels of growth in mastery goal orientation across different populations of students enrolled in this FYE program. As Wigfield and Cambria (2010) discuss, there is little research on goal orientation and ethnicity and gender (Pintrich & Schunk, 2002). Further research on gender and ethnic differences in goal orientations need to be further explored.

**Self-Efficacy**

According to Bandura (1994), self-efficacy encompasses the belief that one has the ability to influence outcomes by exerting personal control. Perceived self-efficacy is more about what you believe you can do with the skills you have in a given circumstance rather than one’s belief in the number of skills they have (Bandura, 1994). Perceived high levels of self-efficacy can influence levels of motivation and effort in academic settings and help students persist during difficult times (Bandura, 2006).

Academic self-efficacy then refers to a student’s perceived ability and competence to do well on academic tasks. Having a strong sense of academic self-efficacy can predict whether students will perceive academic tasks as either a threat or a challenge (Zajacova et al., 2005). Research suggests a high level of self-efficacy is a strong predictor of overall academic success (Zajacova et al., 2005). It has been positively correlated with many academic outcomes such as, GPA (Hsieh, Sullivan, & Guerra, 2007; Zajacova et al., 2005), motivation for success, resiliency, self-regulation, and goal commitments (Bandura, 2006). Although Bandura (1994) conceptualized self-efficacy as task specific, the construct has been applied at broader levels (e.g., self-efficacy with regard to a particular content domain). In the current study, I will assess self-efficacy at the university course-level, aimed to capture their self-efficacy with
university courses outside of FYE. I will be assessing self-efficacy with the academic self-efficacy scale from PALS (Midgley et al., 2000). The original measure is designed to assess self-efficacy at the class-level; however, I will be adapting it to a broader university course-level.

**Relevance to current study.** Bandura (2006) highlights how self-efficacy is an influential factor in one’s adjustment to change, which D’Lima, Winsler, and Kitsantas (2014) assert is important during student’s first year of college. Moreover, a high level of academic self-efficacy promotes student success as measured by GPA (Hsieh et al., 2007) and translates to better first-year student outcomes (Zajacova et al., 2005). FYE 101 has a large percentage of FGCS, who, literature shows struggle with sense of self-efficacy (Gibbons & Borders, 2010; Hicks, 2003; Wang & Castañeda -Sound, 2008). The FYE program I studied helps to foster and promote high levels of perceived self-efficacy, which I believe helps students to recognize and maximize their true academic potential.

**Transformative Experience**

Transformative experience theory focuses on engagement in course content extending beyond the classroom and how such engagement supports a deeper and more enduring understanding of school content (Pugh, 2011; Pugh, Bergstrom, & Spencer, 2017). Transformative experience (TE) refers to learning episodes in which students actively use the knowledge/concepts they learn in school in their everyday lives outside of the learning context. Such use involves using the concepts to see and experience the world in new, meaningful ways (Pugh, 2011). Pugh, Linnenbrink-Garcia, Koskey, Stewart and Manzey (2010) defined TE in terms of three central characteristics: (a) motivated use, (b) expansion of perception, and (c) experiential value. For a student to have a transformative experience, motivated use occurs where the student chooses to
transfers and applies the knowledge or skills to tasks that are different from the original learning context in a situation where he or she is not compelled to do so by the teacher, a school assignment, or situation. For example, a biology student may apply her knowledge of natural selection when she visits the zoo and chooses to try to understand the animals from an evolutionary perspective. Another aspect of TE is expansion of perception in which a presented idea helps a student to see aspects of the world in a new way. For example, a student might perceive a thunderstorm through the lens of weather ideas she has been learning about in class. The third characteristic of TE is experiential value, which relates to the motivation constructs of utility value, intrinsic value, and interest. Specifically, experiential value refers to having a greater appreciation for the usefulness of the content in everyday life. For example, a student may come to value Newton’s Laws because they help him understand events of motion in his everyday life and he finds this kind of fascinating (Pugh et al., 2010).

Research shows how TE relates to positive academic outcomes by not only increasing interest in a particular domain or content area but also helping students maintain their understanding over longer periods of time. Several studies show how students who undergo transformative experiences show an increase in interest for science content (Girod, Twyman, & Wojcikiewicz, 2010; Heddy & Sinatra, 2013; Pugh, Bergstrom, Heddy, & Krob, 2017) and how students’ understanding of the content is more likely to persist over time (Girod et al., 2010; Pugh, 2002). Furthermore, students who undergo transformative experiences are able to transfer their knowledge and apply the learning to new situations (Pugh et al., 2010), which is crucial for real-world application.
Relevance to current study. When students receive instruction intended to foster TE, they are able to achieve deeper learning (Pugh, Bergstrom, & Spencer, 2017), more enduring learning (Girod et al., 2010; Pugh, 2002), and greater conceptual change (Alongi, Heddy, & Sinatra, 2016; Heddy & Sinatra, 2013). This is particularly important for first-year students who may struggle with finding ways to make learning relevant, useful, or long lasting. Although FYE 101 does not utilize a formal Teaching for Transformative Experience (TTE) model (Pugh, Bergstrom, Heddy, & Krob, 2017), the course may be transformative for students because there is an explicit focus on transforming students’ learning and studying experience in other courses. There are gaps in the literature in regards to TE and specific underserved students, therefore, it is important to look at potential differences in TE among different groups, perhaps underserved groups struggle making connections and experience less transformative learning.

Self-Regulation

A self-regulated learning perspective encompasses the idea that students are active participants in their learning process and construct their own meaning and strategies (Pintrich, 2004; Zimmerman & Schunk, 2011). Zimmerman and Schunk (2011) posit that students’ metacognitive strategies in terms of their self-perceptions and regulation processes are key factors in academic success. Students thrive academically when they internalize the notion that they can plan, monitor, control, and regulate how they process information (Pintrich, 2004). In addition to regulating cognition, self-aware students can monitor their motivation and behavior towards accomplishing goals (Pintrich, 2004). This self-directed process is a proactive approach that is not only important in directed forms of learning and inquiry but also in social forms of learning.
such as having the initiative to seek help from peers, parents, and teachers (Zimmerman & Schunk, 2011).

**Relevance to current study.** Surprisingly, research on FYE programs and explicit integration of self-regulated learning is sparse. In addition, gaps also exist regarding self-regulation and underserved student populations; therefore, it is important to look at potential differences in self-regulation among different groups. Perhaps underserved groups differ in their approach to regulating and processing information.

Fostering self-regulation in the learning environment seems especially crucial during a students’ transition year into college. The FYE program I studied, FYE 101 helps to foster and promote self-regulation, which I believe helps students take a more proactive approach to their learning.

**Underserved Students**

**First-Generation Students**

First-generation students are typically defined as college students who do not have a parent who completed a college degree. They represent a large population of enrolled students; making up about one third of students enrolled at a four-year university (Skomsvold, 2015). This rate of enrollment has increased since 2008 where nearly 4.5 million students or 24% of enrolled students were first-generation (Engle & Tinto, 2008). Although trends of enrollment show a more diverse population of entering college students, first-generation college students (FGCS) still tend to be underrepresented in terms of retention and graduation rates (Slaughter, 2009).

**Persistence and achievement.** Considerable research has investigated the persistence of FGCS. In a 1994 longitudinal study, around 44% of FGCS graduated compared to 56% of non-FGCS (U.S. Department of Education, National Center for
Education Statistics, 1998). Unfortunately, recent data reported by the U.S. Department of Education, National Center for Education Statistics (2018a) show this rate dramatically declining. Lauff and Ingels (2013) longitudinal study revealed that in 2004, FGCS graduations rates had dropped substantially to 17% compared to 46% for counterparts who had a parent with a bachelor degree and 59% who had a parent who held a master degree or higher. Research consistently suggests that FGCS are at a higher risk of dropping out than non-FGCS (Horn, 1998; Ishitani, 2006; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). Not only are FGCS graduating at lower rates, research consistently shows these students earn lower grades than their non-FGCS counterparts (Huerta et al., 2013; Martinez et al., 2009; Pascarella et al., 2004).

Researchers have identified numerous factors that help account for the lower persistence and achievement among first-generation students. One factor is that parent education is correlated with student attrition, (Chapman & Pascarella, 1983; Stage, 1988) student academic outcomes, and their educational experience (U.S. Department of Education, National Center for Education Statistics, 2007). Ishitani (2006) found that first-generation students whose parents had some college education were more likely to graduate in timely manner than students whose parents never attended college. Not surprisingly, there is also a link between low parental expectations of completing degree and degree completion (Ishitani, 2006).

Higher education is one aspect of cultural capital in our society and unfortunately, FGCS do not have the same exposure or access to that capital as do non-FGCS (Lundberg, Schreiner, Hovaguimian, & Miller, 2007). According to Tello and Lonn (2017), parents of non-FGCS were the main source of cultural capital and were instrumental in helping their children navigate campus resources. Overall lack of cultural
capital affects parent and student knowledge of factors needed for academic success (Tello & Lonn, 2017), which leave FGCS receiving less familial support in navigating college (Lowery-Hart & Pacheco, 2011). Having a parent with a degree increases cultural capital, which translates to better student academic outcomes and enriched educational experience.

In addition to being first-generation, these students often struggle with the complex interplay of other subordinate aspects of identity such as race, ethnicity, and low SES (Tello & Lonn, 2017). Ishitani (2003) found that factors such as race, sex, and income substantially increased attrition rates for FGCS. Often low-income and ethnic minority students are the first in their families to attend college (Engle & Tinto, 2008). When combined, first-generation status and low-income puts these students at a much greater risk for dropout than students without these risk factors. Low-income, FGCS are four times more likely than non-low-income and non-FGCS to leave college without a degree and completion rates are only 11% compared to 55% respectively (Engle & Tinto, 2008).

First-generation students are at a disadvantage, both academically and socially. According to Tym, McMillion, Barone, and Webster (2004), FGCS outside work and family obligations impeded their ability to participate in extracurricular campus activities. When compared to their peers, FGCS have lower social integration and are less involved in extracurricular activities (Pascarella et al., 2004). Research also shows that FGCS tend to be less academically prepared (Huerta et al., 2013; Tym et al., 2004) and require more remedial courses than non-FGCS (Warburton, Bugarin, & Nuñez, 2001). These students rate themselves lower academically and report more perceived barriers to their education than their counterparts (Gibbons & Borders, 2010).
**Motivation.** Research on motivation among first-generation students is more limited. Some research suggests FGCS have lower sense of self-efficacy (Gibbons & Borders, 2010; Hicks, 2003; Wang & Castañeda-Sound, 2008) and expectation for success (Pintrich, 1995). Pugh and colleagues (Pugh, Bergstrom, Heddy, et al., 2017) found that FGCS did not differ from non-FGCS in reported levels of transformative experience. Research on goal orientation and self-regulation as it relates to FGCS seems to be lacking. Further research is clearly needed on motivation among FGCS.

**Ethnic Minority Students**

The number of ethnic minority (all races/ethnicities other than White, non-Hispanic) undergraduate students has vastly increased over the decades. Ethnic minority student enrollment nearly doubled from 17% in 1976 to 32% in 2004 (U.S. Department of Education, National Center for Education Statistics, 2007). The latest report from U.S. Department of Education, National Center for Education Statistics (2017) indicated that in 2014, of the 17.3 million undergraduate students enrolled, approximately 7.7 million (over 44%) were ethnic minority. These trends put minority students on the trajectory of soon becoming the majority.

**Persistence and achievement.** Ethnic minority students are less likely than White students to both enroll and persist in college (Chen & Carroll, 2005; U.S. Department of Education, National Center for Education Statistics, 2004). In 2004, among 18–24-year-olds, nearly two thirds of Asian Americans enrolled in college, followed by nearly half of Whites, next were Black students, with enrollment rates of one third and last were Hispanic American with only one quarter enrolling (U.S. Department of Education, National Center for Education Statistics, 2004). In all, ethnic minority students earned 22% of the degrees conferred in 2002-03 for a total of 200,000 baccalaureate degrees
compared to Whites having earned a little over a million (U.S. Department of Education, National Center for Education Statistics, 2005). These graduation rates perpetuate the issues faced by first-generation students. In addition to persistence, the literature shows that ethnic minorities matriculate into universities with lower GPA than White students and this gap often persists through college (Gershenfeld, Hood, & Zhan, 2016; U.S. Department of Education, National Center for Education Statistics; 2007). The research shows that ethnic minority students are often the first in their families to attend college (Engle & Tinto, 2008) and when compounded with low-income and first-generation status, increases their college attrition (Ishitani, 2003). While dropout rates for ethnic minorities has decreased over the past few decades, these students are still persisting at lower rates than White students (U.S. Department of Education, National Center for Education Statistics, 2017). Tello and Lonn (2017) assert that Latinx first-generation students face unique barriers to academic success, specifically, the lack of cultural capital, which is talked about in the next section.

**Motivation.** Research confirms that minority students are cognizant of the negative academic stereotypes associated with their ethnicity and experience higher academic anxiety and lower intrinsic motivation to learn than White students who are not stigmatized (Chavous et al., 2003; Reyna, 2000). A recent study shows how the concerns about academic stigmas can also trigger minority students to ruminate about negative performance, which can lead to psychological distress (Burgess, Molina, Bhandari, & Dibartolo, 2018).

Black students face a unique issue with motivation where many gifted Black students struggle with balancing cultural assimilation and the stigma tied to being gifted (Rodgers, 2008), in other words, Black students are scrutinized of not “being Black” if
they are high achievers (Witherspoon, Speight, & Thomas, 1997). Furthermore, Black students are at a greater risk of experiencing isolation and low sense of belonging as a result of perceived lack of peer support towards their academic success (Witherspoon et al., 1997). There is also a correlation with self-efficacy and race centrality where despite the stigma; a recent study revealed that Black students reported higher academic self-efficacy than Hispanic and Asian Americans. More interestingly, Black students reported similarly high levels of self-efficacy as did White students even though White students had higher academic performance (Edman & Brazil, 2007).

Latinx students report self-efficacy and desire to succeed in college as influential factors in their success (Hernandez, 2000). Latinx low enrollment and graduation rates are consistently related to student’s beliefs about oneself (Valencia & Black, 2002) and Hernandez (2000) found that these students are more likely to succeed with a stronger sense of self and self-efficacy.

Interviews conducted with Latinx students revealed that they did not believe they were “smart” and expressed that low confidence and motivation were factors in their achievement (Cavazos et al., 2010). Cavazos et al. (2010) found that factors such as resiliency, intrinsic motivation, high self-efficacy, and self-belief that one can accomplish their goal were important to these students.

**Relevance to current study.** Ethnic minority students often enter their first year with a disadvantage due to factors such as lower-income, first-generation status, and weaker academic preparedness (Musoba et al., 2013). Their concerns with navigating campus, sense of belonging (Hurtado & Carter, 1997) and academic preparedness can be resolved by campus FYE programs that help foster scholarship by providing the tools needed for academic success (Musoba et al., 2013). Torres (2006) discusses how
institutions can be co-creators of students’ cognitive maps that include positive symbols, self-reflection, self-regulation, and forethought to navigate the university system. FYE instructors can aid in creating a cognitive map that will allow students to envision college success and adapt to their college community (Torres, 2006).

Unfortunately, many ethnic students are postponing extracurricular involvement until they feel more academically confident which may slow the integration process (Terenzini et al., 1994). FYE offers an immediate solution for these incoming minority students. Attending a first-year seminar aimed at supporting self-regulation, sense of belonging, mastery and self-efficacy could help to fast track their future success.

**Conditionally-Admitted Students**

As the number of underrepresented students increase, universities are charged with finding ways to support their specific needs. Li (2007) reports that between 1984 and 2004, minority undergraduate enrollment increased by 146% compared to the 40% overall student enrollment. We also know that first-generation students make up about one third of newly enrolled students nationwide (Kinzie et al., 2008; Skomsvold, 2015; Staklis & Chen, 2010).

While these enrollment trends align with a nationwide effort to increase college access for underserved students; unfortunately, nearly half of these high school graduates are academically unprepared to succeed in college (ACT, 2004; Stewart & Heaney, 2013). Underrepresented students from underserved populations such as first-generation, ethnic minority, and low SES often finish high school with low GPA and/or low standardized test scores (Stewart & Heaney, 2013). Many of these high school students do not complete the academically challenging coursework required for college success and this translates to low college retention and graduation rates (Kinzie et al., 2008). This
aligns with data from the NCES that shows nearly one third of all first-year college students require remediation (Parsad & Lewis, 2003).

In an effort to keep college accessible and better serve these students, several universities have developed admission policies that allow matriculation under a ‘condition admitted’ status. The research on conditional admission in terms of criteria, policies, and effectiveness is relatively new and limited. Although low GPA or ACT scores typify conditionally-admitted students, they are also more likely to be first-generation, low SES and/or ethnic minority (Stewart & Heaney, 2013). Unfortunately, little research exists on the persistence, achievement, and motivation of these students. Consequently, investigating of these outcomes for conditionally-admitted students is needed.

**Relevance to current study.** The FYE program I am studying (FYE 101) serves conditionally-admitted students who meet the university criteria of an index score (a state-calculated score using a combination of high school GPA and SAT/ACT) below 94. FYE 101 focuses on intellectual and personal development and is quite effective at improving student academic outcomes. I was interested in the relative effectiveness of FYE 101 in terms of motivational outcomes, GPA and persistence for conditionally-admitted students compared to other groups of students in FYE 101.

**Gender**

**Enrollment, persistent, and achievement.** Historically women have been underrepresented in education in terms of enrollment, graduation rates and some aspects of achievement. Spanning a decade from 1997 to 2007, Snyder et al. (2009) report that male enrollment increased by 22% while females increased by 29%. Over the past few decades, we are seeing a steady trend showing men are disproportionately enrolling and
completing college at a lower rate than women (Ewert, 2012; King, 2006). In 2003, a report for the American Council on Education showed women were enrolling in college at much greater rates than were men (9.6 million and 7.3 million, respectively). Furthermore, Adebayo (2008) reports that while female enrollment had increased over the decades, male enrollment had declined. Furthering this trend, a projection released by the NCES in 2011 predicted that between 2008 to 2020 we will see an increase in bachelor degree attainment by 18% for men and 24% for women (Hussar & Bailey, 2011). Today, the gender gap seems to be closing rapidly, where women have not only surpassed men in terms of enrollment but also in degree attainment (Ewert, 2012; King, 2006). According to King (2006), women were earning the majority of undergraduate degrees and were also more likely than men to complete their four-year degree within five years. In addition to surpassing men in enrollment and attainment rates, women are also pursuing and majoring in once, male-dominated disciplines (Adebayo, 2008).

We still see minor gender gaps in content areas and achievement, which align more with historical data. The U.S. Department of Education, National Center for Education Statistics (2005) reported that although more high school girls enroll in advanced math and science courses, they are still less likely to report liking the courses. This trickles into higher education where we still see women underrepresented in STEM courses (U.S. Department of Education, National Center for Education Statistics, 2005). Research also shows a gap in higher degrees where women earn less than half of business, law, and medicine degrees (U.S. Department of Education, National Center for Education Statistics, 2005).

**Motivation.** Cavallo, Potter, and Rozman (2004) found that while male students tended to be higher in performance orientations than female students, male mastery
orientation increased over the semester while female students’ mastery decreased. Cavallo et al. (2004) also found gender differences in self-efficacy where males reported significantly higher academic self-efficacy than female students; this is consistent with other research (Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002).

**Relevance to current study.** We are seeing the gender gap nearing a close in some areas in terms on enrollment, degree attainment and achievement, which implies that it is important to look at how FYE content is more critical for male students. Swanson, Vaughan, and Wilkinson (2015) recently explored gains for males enrolled in an existing, comprehensive FYE program. The study measured GPA and persistence during first and third year. Significant differences were found for all male participants compared to male non-participant for both the first- and third-year cohorts. These trends justify a need to further explore gender difference, more the potential interaction between at-risk identities such as male and first-generation or male and ethnic minority. However, with gender differences in STEM and motivational outcomes, an effective FYE program could be equally beneficial for both male and female students. These unknowns justify comparing gender when investigating the effectiveness of FYE courses.

**First-Year Experience**

Historically, four-year universities nationwide have implemented first-year experience (FYE) programs, which typically target incoming traditional freshmen students directly from high school. Currently FYE courses are offered at nearly 90% of four-year universities (Padgett & Keup, 2011). In general, the goals of FYE courses are to increase student academic outcomes, retention and graduation rates (Jamelske, 2009; Pascarella & Terenzini, 2005). The data consistently supports the efficacy of FYE on
student success. Goodman and Pascarella (2006) found that students enrolled in FYE programs showed gains in their GPA.

Furthermore, Jamelske (2009) found that students who attended an FYE course showed a GPA increase of .10 points and this effect was statistically significant at the .05 level. Pascarella and Terenzini (2005) looked at effect size of first-year experience seminars on next year enrollment and found that persistence increased as much as 13 percentage points for students enrolled versus those not enrolled in FYE. Student success includes outcomes such as retention, persistence, graduation rates, GPA, student engagement motivation and overall self-reported student satisfaction (Goodman & Pascarella, 2006).

Despite variation and dynamics in the structure of FYE courses across universities, the mission and outcomes are fairly consistent. Program curriculums varies in content, for example, some are more academically focused on writing, tutoring, study skills, and supplemental instruction. While others concentrate more on non-academic strategies such as student engagement and social experiences. Permzadian and Credé (2016) discuss varying factors that make some FYE programs more effective than others. Factors relating to efficacy include (a) seminar type (orientation, academic seminar or discipline-linked seminar), (b) structure (part of a larger learning community or stand-alone), (c) instructor (specialized training), (d) seminar length (a few weeks or semester-long), and (e) target population (all students or underrepresented groups). Again, regardless of the varying components, FYE courses are highly correlated with overall student success (Jamelske, 2009; Pascarella & Terenzini, 2005).
Current Study

Currently at this Rocky Mountain University ($N = 13,000$) there is an effective and comprehensive FYE program (FYE 101) that focuses on intellectual, personal and professional development (Jenkins-Guarnieri et al., 2014-15) more specifically, it has constructs grounded in goal and motivation theories (Swanson et al., 2015). Prior research shows that FYE 101 is effective at mitigating academic outcomes for students within the course when compared to students who do not participate, however we do not know if it is equally effective for all students within the course. The purpose of this study was to determine if the existing intervention was equally effective in mitigating potential differences among varying groups of underserved students within the FYE 101 course. The subpopulations I was interested in studying were first-generation, ethnic minority, and conditionally-admitted students. The rationale for grouping all ethnic minorities together was due to the lack of diversity within the ethnic minority groups on this campus. As reviewed in the current literature, there are some common patterns for ethnic minorities.

Rationale

One in four college students leave college during their first year (U.S. Department of Education, National Center for Education Statistics, 2004). It is, therefore, crucial to look for ways to help these students adjust and persist. If an incoming student lacks cultural capital, is threatened by negative ethnic stereotypes, feels academically unprepared, or lacks achievement motivation, they will likely be among that 25%. D’Lima et al. (2014) sum it up nicely:

It is, therefore, essential for researchers to examine the early motivational profiles of ethnically diverse, first-year college students as such profiles may be related to
student performance, retention, and eventual completion of college.

Understanding early student motivation may help in providing instruction in a manner that will support students’ motivation to successfully complete their college education. (p. 341)

One of the ways in which FYE programs counter academic struggles and dropout rate is to help students develop positive motivation patterns. These positive motivation patterns can be particularly important for groups of underserved students. FYE 101 has a large percentage of first-generation and ethnic minority students who likely struggle with achievement motivation, academic preparedness, and creating their college cognitive map. FYE 101 aims to foster and promote these very key elements and I am interested in the impact across a variety of students. Knowing that students benefit from FYE courses and that underrepresented students perceive less institutional support is it important to explore the academic benefits gained by attending FYE 101. A primary aim of this study was to assess potential differences in motivation, self-regulation, and achievement for three populations of underserved students enrolled in FYE 101. A secondary aim was to explore potential gender differences in terms of the same outcomes.

To increase the validity of such comparisons, I planned to control for individual factors (initial levels of motivation and self-regulation, gender, and prior achievement in the form of index scores). Due to the nested nature of the data (students within classrooms), I also planned to control for classroom level factors. Specifically, the level-two class variables selected were teacher experience, class type, and percentage of first-generation/ethnicity composition. For teacher experience I captured whether the instructor is new to teaching FYE 101 or if they had taught if previously. For class type, I was interested in whether this FYE 101 section is specialized (honors status or business).
or if it is of a normal (random and mixed freshman student composition). I was also interested in the combination of first-generation and ethnicity composition in each section.
The results from this study helped to answer the following overarching question: Is the FYE 101 course effective in mitigating gender differences and differences between underserved students (first-generation, ethnic minority, and conditionally-admitted) and non-underserved students? My specific research questions are:

Q1 Controlling for initial levels of motivation, gender, and class-level covariates (instructor experience, class type, percent first-generation/ethnicity composition), are there differences among underserved student populations (first-generation, ethnic minority, and conditionally-admitted) in levels of motivation and self-regulation at the end of the semester?

Q1a Controlling for initial levels of goal orientation, gender, and class-level covariates, are there differences by subpopulations in levels of goal orientation at the end of the semester?

Q1b Controlling for initial levels of self-efficacy, gender, and class-level covariates, are there differences by subpopulations in levels of self-efficacy at the end of the semester?

Q1c Controlling for initial levels of transformative experience, gender, and class-level covariates, are there differences by subpopulations in levels of transformative experience at the end of the semester?

Q1d Controlling for initial levels of self-regulation, gender, and class-level covariates, are there differences by subpopulations in levels of self-regulation at the end of the semester?

Q2 Controlling for initial levels of motivation and class-level covariates (instructor experience, class type, percent of first-generation/ethnicity composition) are there gender differences in levels of motivation and self-regulation at the end of the semester?

Q2a Controlling for initial levels of goal orientation, and class-level covariates, are there gender differences in levels of goal orientation at the end of the semester?

Q2b Controlling for initial levels of self-efficacy and class-level covariates, are there gender differences in levels of self-efficacy at the end of the semester?

Q2c Controlling for initial levels of transformative experience and class-level covariates, are there gender differences in levels of transformative experience at the end of the semester?
Q2d  Controlling for initial levels of self-regulation and class-level covariates, are there gender differences in levels of self-regulation at the end of the semester?

Q3  Controlling for prior achievement (index score), gender, and class-level covariates (instructor experience, class type, percent first-generation/ethnicity composition) are there differences in end-of-semester GPA among underserved student populations (first-generation, ethnic minority, and conditionally-admitted)?

Q4  Controlling for prior achievement (index score) and class-level covariates (instructor experience, class type, percent first-generation/ethnicity composition) are there gender differences in end-of-semester GPA?

Q5  Controlling for prior achievement (index score), gender, and class-level covariates (instructor experience, class type, percent first-generation/ethnicity composition), are there differences in persistence (next semester enrollment) among underserved student populations (first-generation status, ethnic minority, and conditionally-admitted)?

Q6  Controlling for prior achievement (index score) and class-level covariates (instructor experience, class type, percent first-generation/ethnicity composition) are there gender differences in persistence (next semester enrollment)?
CHAPTER III

METHODOLOGY

Context

Currently at this Rocky Mountain University (∙ N = 13,000) there is an effective and comprehensive FYE program (FYE 101) that focuses on intellectual, personal, and professional development (Jenkins-Guarnieri et al., 2014-15) more specifically, it has constructs grounded in goal and motivation theories (Swanson et al., 2015). This Rocky Mountain University has a diverse student population with nearly 60% of students being of ethnic minority and 40% being first-generation. First-Year Experience 101 is offered as a three-credit course that is structured over the duration of the semester. This course targets incoming freshman who have the option to self-select into the program their first semester (Vaughan, Lalonde, & Jenkins-Guarnieri, 2014). The smaller class sizes (25 or few students) allow instructors to foster a student-centered, autonomy-supportive learning environment (Swanson, et al., 2015). FYE 101 is a comprehensive and robust course that aims to help students improve their academic experience by focusing on essential skills needed to be successful in college.

FYE 101 curriculum includes both academic and non-academic topics ranging from academic skill competencies (reading, writing, critical thinking), time management, memory, motivation, and research skills. Table 1 illustrates the specific course content covered during a typical semester, as illustrated in the table, the spectrum of topics address intellectual, personal and professional development. Intellectual development
outcomes include targeting strategic learning strategies, information processing, and written and oral communication. Personal development outcomes address goal setting, time management, motivation, and diversity. The professional developmental outcomes are aimed at teamwork, collaboration, and personal aptitude and interest (Vaughan et al., 2014).

Table 1

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Higher Education, Professional Communication, and Liberal Arts Education</td>
</tr>
<tr>
<td>2</td>
<td>Useful and Effective Goals and Introduction to Journal Articles</td>
</tr>
<tr>
<td>3</td>
<td>Research Project and Paraphrasing and Plagiarism</td>
</tr>
<tr>
<td>4</td>
<td>Time Management</td>
</tr>
<tr>
<td>5-6</td>
<td>Information Processing and 2- or 4-Year Plan</td>
</tr>
<tr>
<td>7-8</td>
<td>Comprehension Monitoring, Study Groups, and Research Project</td>
</tr>
<tr>
<td>9-10</td>
<td>Majors &amp; Careers and Motivation</td>
</tr>
<tr>
<td>11</td>
<td>Research Project</td>
</tr>
<tr>
<td>12</td>
<td>Metacognition &amp; Self-Regulation</td>
</tr>
<tr>
<td>13-14</td>
<td>Diversity and Wellness/Coping with Stress</td>
</tr>
<tr>
<td>15</td>
<td>Wellness/Coping with Stress and Final Exam Review</td>
</tr>
</tbody>
</table>

The textbook and curricula for this course are grounded in topics in the domain of educational psychology that focus on motivational constructs such as self-efficacy, goal orientation, (Swanson et al., 2015), and self-determination, (Jenkins-Guarnieri, Vaughan, & Wright, 2015) as well as self-regulation, time management, and four-year educational
planning (Vaughan, Pergantis, & Moore, 2018). Another component that makes FYE 101 effective is the fidelity of implementation. Instructors are carefully selected and undergo a week-long training in the summer, followed by continuous professional development and training throughout the semester (Swanson et al., 2015; Vaughan et al., 2018).

During the semester of the current study there were 15 instructors teaching 25 different sections of FYE 101. This was a unique semester where nearly half of the instructors had no previous experience teaching FYE 101 and the other half had between one and four years of experience teaching FYE 101.

The hope is that students taking this course will enhance their learning strategies to help them persist academically. The results show a positive impact on increased student GPA and fall-to-fall persistence for students enrolled in FYE 101 versus students who had not taken the course (Swanson, et al., 2015; Vaughan et al., 2014). According to Jenkins-Guarnieri et al. (2014-15), students who successfully completed FYE 101 had higher odds of persisting and being in good academic standing than students who did not attend FYE 101.

In the current study, I was interested in potential differences in motivation, self-regulation, GPA, and persistence for different populations of students enrolled in FYE 101, controlling for initial levels of motivation, self-regulation, and achievement. I was also interested in potential gender differences in terms of the same outcomes.

**Participants**

Participants were students enrolled in one of the 25 sections the FYE 101 (~400) course. I visited each class/section enrolled in FYE 101 and invited the students to participate in the study. The students had the choice to participate via Qualtrics on their phones/computers or they could elect to complete a paper survey. Participants were
informed that participation was voluntary and was not required as part of the FYE 101 course. Three hundred eighty-eight students participated in the study at one or more time point, however only 233 students completed all three time points. Participants from the 388 students were identified as 63.8% Caucasian, 21.6% Latinx, 3.9% Black/African, 3.3% Asian, .9% Native American, .3% Middle Eastern and 6.3% other or mixed. In addition, 34% of the participants were male, 65% female, and .6% non-specified. Due to power issues, I chose to group all ethnic minority groups together. Figure 1 illustrates the number, percentages, and overlap for each subpopulation observed. The overall mean age was 18.2 and 40.5% reported being first-generation. The mean index score was 104.32, end-of-semester GPA mean was 2.80.

**Data Collection Procedures**

A consent form (see Appendix A) in conjunction with the first survey (see procedure below) was provided for participants completing the survey via Qualtrics. If students selected the “no participation option,” they were automatically taken to the end of the survey. Individuals not using their phones were instructed to read and sign the consent form and then complete the survey, or--if they choose not to participate--to simply turn in a blank consent form and survey. This research involved human participants and Institutional Review Board approval was obtained (see Appendix B).
Figure 1. Venn diagram illustrating overlap of subpopulations to identify potentially most at-risk underserved students.
Survey data were collected at three time points. At the beginning of the fall semester, I went into each FYE 101 classroom to administer the surveys \((n = 337)\). Students had an option to either complete the online Qualtrics survey via their phones or computers or they could complete a paper/pencil version. This initial survey included the demographic questionnaire and the pre-assessment survey that measured goal orientation and self-efficacy.

Three weeks into the semester, the students were asked to complete the second survey. Their instructors administered the survey during their regular scheduled class time \((n = 355)\). Again, students had an option to either complete the online Qualtrics survey via their phones or computers or they could opt to complete a paper/pencil version. At this second time point, students completed a transformative experience survey and self-regulation survey in class. These surveys were given three weeks into the semester because students did not have a baseline of experience to report beforehand.

At the end of the semester, post data were collected using all of the above-mentioned measures. The data were collected during a regularly scheduled class time in the computer lab \((n = 278)\). The class instructor provided the link for them to complete the online survey via Qualtrics.

**Measures**

**Demographic and course data.** Demographic information collected included gender, age, ethnicity, year in school, transfer status, first-generation status, parent’s educational attainment, course instructor, class section, and class time. Similar to other studies, there was little diversity within the ethnic groups at this university. Due to power issues, I chose to group all of the ethnic minorities together. At the end of the semester, I
also collected data on the number of classes missed (see Appendix C). Five students who had missed more than 20% of class sessions were excluded from the analysis.

**Goal orientation.** To capture goal orientation, I adapted 14 items from the Patterns of Adaptive Learning Survey (PALS; Midgley et al., 2000), which consisted of 14 five-point Likert items and fit into three subscales: (a) mastery, (b) performance-approach, and (c) performance avoid (see Appendix D). Sample items from the mastery subscale included, “It's important to me that I thoroughly understand my college coursework” and “One of my goals in my college courses is to learn as much as I can.” Sample items from the performance-approach subscale included, “One of my goals is to show others that I'm good at my college coursework” and “One of my goals is to look smart in comparison to the other students in my other UNC classes.” Sample items from the performance-avoid subscale included, “It’s important to me that teachers in my other UNC classes don’t think that I know less than others” and “One of my goals is to keep others from thinking I'm not smart in my college courses.” To test separation and item-fit for a three-factor model (mastery, performance-approach, and performance-avoid), a confirmatory factor analysis was completed using Mplus, Version 4.2 (Muthén & Muthén, 1998-2010). Separation of these subscales is an indication that students are distinguishing between constructs in their responses. Based on the model fit guidelines¹, both the confirmatory factor index (CFI) and the Tucker-Lewis Index (TLI) suggest that the model was a good fit for both the pre- and the post-measures (see Table 2). The root mean square error of approximation (RMSEA) differed slightly between pre- and post-measures and although the post was borderline, the overall model demonstrated adequate

¹ Hu & Bentler (1999) suggests CFI > .95 good fit, > .9 acceptable, TLI > .95 good fit, > .9 acceptable and RMSEA < .05 good fit, <.08 acceptable.
The reliabilities were strong or adequate for the three goal orientation subscales, mastery pre ($\alpha = .771$), mastery post ($\alpha = .845$), performance-approach pre ($\alpha = .842$), performance-approach post ($\alpha = .888$), performance-avoid pre ($\alpha = .755$), and performance-avoid post ($\alpha = .803$).

**Table 2**

*Model Fit Statistics for Goal Orientation Measure*

<table>
<thead>
<tr>
<th>Model</th>
<th>Comparative Fit Index (CIF)</th>
<th>Tucker-Lewis Index (TLI)</th>
<th>Root Mean Square Error of Approximation (RMSEA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOPRE</td>
<td>.98</td>
<td>.98</td>
<td>.07</td>
</tr>
<tr>
<td>GOPOST</td>
<td>.99</td>
<td>.98</td>
<td>.08</td>
</tr>
</tbody>
</table>

*Note.* GOPRE = Goal Orientation Pre-survey; GOPOST = Goal Orientation Post-survey

*N = 388*

**Self-efficacy.** For self-efficacy I adapted items from the PALS scale (Midgley et al., 2000), which consisted of five, five-point Likert items. Sample items included, “I can do almost all of the work in my other UNC classes if I don't give up.” and “I'm certain I can master the skills taught in my other UNC classes this year.” (see Appendix E). Exploratory factor analysis confirmed that the SE separated from the other measures. These items had moderate to high reliability for both the pre ($\alpha = .83$) and post ($\alpha = .84$).

**Transformative experience.** To capture transformative experience, I adapted items from the Transformative Experience Questionnaire (TEQ; Koskey, Stewart, Sondergeld, & Pugh, 2018), which consisted of 27 four-point Likert items. These items assessed the three characteristics of transformative experience (motivated use, expansion of perception, and experiential values) and represent a continuum of engagement ranging from in-class engagement to activity, out-of-class engagement. Sample items included, “I
find myself thinking about the UNIV 101 course content in my life outside of school” and “I look for chances to use knowledge from UNIV 101 in my life outside of school” (see Appendix F).

For the TEQ, a Rasch analysis (Rasch, 1960, 1980) was used to develop a composite score using WINSTEPS software (Linacre, 2006). Rasch is a useful tool to measure complex constructs like TE as it provides useful information on whether the different characteristics function as one construct (Bond & Fox, 2001). The Rasch model is unique because it can provide in depth information about participant performance and the nature of TE. This model presents items on a hierarchy from easiest to most difficult level of participant agreement, so we can easily depict which items were more or less likely to be endorsed by the participant. Infit MNSQ > 1.4 (Wright & Linacre, 1994) was used for the cutoff of mis-fitting items. The 27 items fit the model which indicated unidimensionality of transformative experience. The measure had acceptable person separations (mid = 3.36, post = 4.13) and item separations (mid = 6.67, post = 5.51), suggesting that, along the continuum, the measure differentiated among levels of student engagement and item difficulties. In addition, the measure had strong person reliability (mid = .92, post = .94) and item reliability (mid = .94, post = .97), indicating replicability of person and item order for similar samples (i.e., we would expect students to be in relatively the same order of high to low transformative engagement and we would expect the items to be in a similar order of hardest to easiest to endorse).

**Self-regulation.** To capture self-regulation, I adapted items from the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich, 1991), which consisted of nine seven-point Likert items. These items assessed the three characteristics of metacognitive self-regulation, time/space regulation, and effort regulation. Sample items included,
“Before I study new course material thoroughly, I often skim it to see how it is organized”, “I make sure I keep up with the weekly readings and assignments for this course,” and “Even when course materials are dull and uninteresting, I manage to keep working until I finish” (see Appendix G). Exploratory factor analysis confirmed that the SR separated from the other measures. These items had moderate reliability for both the pre ($\alpha = .74$) and post ($\alpha = .81$).

**Achievement.** Receiving four-year institutions have an index score requirement that is calculated using high school GPA and ACT or SAT scores. Most of these students were freshman and had no incoming GPA, therefore, as a measure of prior achievement, incoming index score was used. End-of-semester GPA was used as a measure of semester achievement. All GPA records were obtained from the institution’s office of reporting and analysis.

**Persistence.** Persistence was operationally defined as next semester enrollment. Following the fall semester, a report was provided from the institution’s office of reporting and analysis which identified students from the study who had enrolled for classes the subsequent semester. This measure does not account for students that transferred to another university or dropped out altogether.

**Data Analysis Procedures**

**Comparison of Underserved Subpopulation Outcomes**

To account for the hierarchical data, I planned to use hierarchical linear modeling to analyze the effectiveness of the FYE course for different subpopulations (Osborne, 2000; Raudenbush & Bryk, 2002). This complex form of ordinary least squares regression was intended to analyze each student in each class/section of the FYE 101 course and to account for the shared variance of their teacher and classroom (Woltman,
Feldstain, MacKay, & Rocchi, 2012). I planned to use a two-level hierarchical linear model (HLM) using Mplus, Version 4.2 (Muthén & Muthén, 1998-2010) to simultaneous evaluate student and class level variables. This nested data were evaluated using FYE 101 student as level one and the class being level two. The level two class variables selected were teacher experience (prior FYE 101 teaching experience or no prior FYE teaching experience), class type (specialized or normal), and percentage of first-generation/ethnicity composition.

In conducting the HLM analysis, I followed a three-strep procedure recommended by Lee (2000). The first step involved examining the intraclass correlation coefficients (ICCs) using an unconditional HLM model to determine the amount of variance between classes for each outcome variable. An ICC greater than .1 for a given dependent variable indicates more than 10% of variance lies between classes, which should be accounted for with multi-level modeling (Peugh, 2010; Thompson, Fernald, & Mold, 2012). When HLM was called for, I used a random-coefficient HLM model with level two covariates (teacher experience, class type, and percentage of first-generation/ethnicity composition), individual-level covariates, and level one variables (gender, subpopulations) using a means-as-outcomes HLM mode. I also used an unconditional HLM model to test for initial level two differences and no significant differences were detected.

When HLM analysis was not called for, I conducted ANCOVAs with level one variables (subpopulations) and individual-level covariates added to the model for the continuous outcome variables (Research Questions 1-4). I conducted logistic regression with level one variables (subpopulations) and individual-level covariates added to the model for dichotomous outcome variables (Research Questions 5-6). For all analyses, I
centered the covariate variables. Details on the analyses for each research questions are provided in the results.

When significant results were found for underserved student populations, I ran all two-way interactions between underserved groups. This was to determine any interactive effects of, for instance, being first-generation and ethnic minority. Although it is possible that a combination of all three groups is influential, three-way interactions were not run due to sample size limitations.
CHAPTER IV
RESULTS

Research Question 1

The first research question investigated potential differences by underserved student subpopulations (first-generation status, ethnic minority, and conditionally-admitted) in levels of motivation, self-regulation, and transformative experience at the end of the semester, controlling for gender and initial levels of these variables. That is, the question investigated whether the FYE course was differentially effective for first-generation students, ethnic minority students, and conditionally-admitted students in terms of these motivation outcomes. For each analysis, I first used a model with all of the subpopulations variables in one model to reduce the number of tests and reduce the probability of a Type I error. If significant or marginally significant ($p = .05 - .10$) results were found, I conducted follow-up analyses with a single subpopulation variable in the model in order to understand the independent relationship of the subpopulation variable to the outcome variable (not accounting for the other subpopulation variables).

I first investigated potential subpopulation group differences in terms of goal orientation (Research Question 1a). To determine if I needed to account for class-level (level two) differences, I examined the intraclass correlation coefficient (ICC) for goal orientation using a random intercepts model. Class-level differences were small and not significant for mastery orientation (ICC = .05; $p = .232$), performance-approach (ICC = .03, $p = .358$), and performance-avoid (ICC = .03, $p = .440$) across course sections.
Because HLM was not needed for any of the goal orientation variables, I used ANCOVA to investigate differences by subpopulation. I conducted separate ANCOVAs for mastery, performance-approach, and performance-avoid goal orientations. Levene’s test of equality of error variances was not significant for mastery ($p = .126$), performance-approach ($p = .357$), nor performance-avoid ($p = .289$) goal orientations, indicating homogeneity of variance among subpopulations for these outcomes. The homogeneity of regression slopes assumption was met for most analyses. In cases where it was not met, I illustrate the covariate by independent variable interaction and discuss the results from an aptitude-treatment perspective.

Controlling for gender and the pre-measure of mastery goal orientation, there was not a significant main effect for first-generation status ($F[1, 226] = 3.231, p = .074$, $\eta^2_p = .014$), ethnicity ($F[1, 226] = .848, p = .358, \eta^2_p = .004$), or conditionally-admitted status ($F[1, 226] = 1.199, p = .275, \eta^2_p = .005$) on the post-measure for mastery goal orientation. Because first-generation status was marginally significant, I conducted an equivalent ANCOVA with just first-generation status in the model. The results were similar with no finding of a main effect for first-generation status ($F[1, 230] = 2.105, p = .148, \eta^2_p = .009$), Table 3 displays the estimated marginal means. As illustrated in the table, all students reported similar and relatively high levels of mastery goal orientation.

Controlling for gender and the pre-measure of performance-approach goal orientation, there was not a significant main effect for first-generation status ($F[1, 226] = .945, p = .332, \eta^2_p = .004$), ethnicity ($F[1, 226] = .595, p = .441, \eta^2_p = .003$), nor conditionally-admitted status ($F[1, 226] = .351, p = .554, \eta^2_p = .002$) on the post-measure for performance-approach orientation. Table 3 displays the estimated marginal means. As illustrated in the table, all students reported similar and moderate levels of
performance-approach orientation. However, there was a significant interaction between the covariate (pre-performance-approach) and first-generation ($p = .003$). To make sense of this interaction, I created high and low groups by dividing the pre-survey performance-approach data into thirds and dropping the middle third. As Figure 2 illustrates, there is a greater difference between first-generation and non-first-generation students who were low on performance-approach to begin with versus the students in the high group. This suggests potential differences between first-generation and non-first-generation students are evened out more for students initial high in a performance-approach orientation. However, the meaning of this is a bit unclear because a performance-approach orientation is neither clearly desirable or undesirable.

**Figure 2.** Aptitude by treatment interactions for performance-approach. Note: Low = bottom third; high = top third.

Controlling for gender and the pre-measure of performance-avoid goal orientation, there was not a significant main effect for first-generation status ($F[1, 226] = .618, p = .433, \eta^2_p = .003$), ethnicity ($F[1, 226] = .588, p = .444, \eta^2_p = .003$), nor
conditionally-admitted status ($F[1, 226] = 1.124, p = .290, \eta^2 = .005$) on the post-measure for performance-avoid orientation. Table 3 displays the estimated marginal means. As illustrated in the table, all students reported similar and moderate levels of performance-avoid orientation. However, there was a significant interaction between the covariate (pre-performance-avoid) and ethnicity ($p = .022$). To make sense of this interaction, I created high and low groups by dividing the pre-survey performance-avoid data into thirds and dropping the middle third. As Figure 3 illustrates, there was little difference between White and non-White students who were low on performance-avoid to begin with, however, we see a greater difference among students who were initially high on performance-avoid. This could suggest that the intervention is more effectively mitigating potential differences in levels of a performance-avoidance orientation between white and non-white students when students initially have low levels performance-avoidance. However, the intervention may be less effective at reducing levels of performance-avoidance for non-white students when initial levels of performance-avoidance are high.
Table 3

**Descriptive Statistics by Subpopulation**

<table>
<thead>
<tr>
<th>Item</th>
<th>First-Generation (n = 337)</th>
<th>Ethnicity (n = 337)</th>
<th>Conditionally-Admitted (n = 337)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No (Mean)</td>
<td>Yes (Mean)</td>
<td>White (Mean)</td>
</tr>
<tr>
<td></td>
<td>SE</td>
<td>SE</td>
<td>SE</td>
</tr>
<tr>
<td>Motivation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastery GO</td>
<td>4.184 (.052)</td>
<td>4.302 (.049)</td>
<td>4.275 (.046)</td>
</tr>
<tr>
<td>Perform-Approach GO</td>
<td>2.801 (.076)</td>
<td>2.895 (.072)</td>
<td>2.809 (.069)</td>
</tr>
<tr>
<td>Perform-Avoid GO</td>
<td>2.999 (.078)</td>
<td>0.077 (.074)</td>
<td>2.998 (.070)</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>3.943 (.054)</td>
<td>4.020 (.051)</td>
<td>4.038 (.049)</td>
</tr>
<tr>
<td>Transformative Ex. ²</td>
<td>.745 (1.88)</td>
<td>.952 (1.500)</td>
<td>.892 (1.730)</td>
</tr>
<tr>
<td>Self-Regulation</td>
<td>3.694 (.046)</td>
<td>3.715 (.044)</td>
<td>3.723 (.041)</td>
</tr>
<tr>
<td>Achievement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End-of-Semester GPA</td>
<td>2.990* (.075)</td>
<td>2.791* (.080)</td>
<td>2.941 (.070)</td>
</tr>
<tr>
<td>Persistence</td>
<td>93.10%</td>
<td>85.60%</td>
<td>90.80%</td>
</tr>
</tbody>
</table>

*Note.* ¹Estimated marginal means from the ANCOVA output. ²Because HLM analysis does not provide estimated marginal means, raw means are listed. ³Percentages reported are not controlling for index score; see discussion of odds ratios. *p < .05. **p < .01.
Next, I investigated potential differences among subpopulation in terms of self-efficacy (Research Question 1b). To determine if I needed to account for class-level (level two) differences, I examined the ICC for self-efficacy using a random intercepts model. Class-level differences were small and not significant (ICC = .01, \( p = .798 \)) for this outcome variable across course sections. Because HLM was not needed for this variable, I used ANCOVA to investigate these differences. Levene’s test of equality of error variances was not significant (\( p = .067 \)) for self-efficacy, indicating homogeneity of variance among subpopulations for this outcome. Controlling for gender and the pre-measure of self-efficacy there was not a significant main effect for first-generation status (\( F[1, 226] = 1.243, \ p = .266, \ \eta^2_p = .005 \)), ethnicity (\( F[1, 226] = 2.436, \ p = .120, \ \eta^2_p = .011 \)), nor conditionally-admitted status (\( F[1, 226] = 1.420, \ p = .235, \ \eta^2_p = .006 \)) on the post-measure for self-efficacy. Table 3 displays the estimated marginal means. As
illustrated in the table, all students reported similar and relatively high levels of self-efficacy.

Next, I investigated potential differences among subpopulation in terms of transformative experience (Research Question 1c). To determine if I needed to account for class-level (level two) differences, I first examined the ICC for transformative experience using a random intercepts model. Class-level differences were moderate and significant (ICC = .18, \( p = .026 \)). Specifically, an ICC of .18 indicated 18% of the variance is between classes and needs to be accounted for. Because level 2 variables need to be accounted for, I conducted HLM analysis. Controlling for the level 2 variables (teacher experience, class type, and first-generation/ethnicity composition), gender, and initial levels of transformative experience, there was not a significant difference for first-generation status (\( p = .080, b = -.550, t = -1.782 \)), ethnicity (\( p = .664, b = -.140, t = -.435 \)), or conditionally-admitted status (\( p = .150, b = -.470, t = -1.446 \)). Table 3 displays the mean Rasch scores. As HLM does not output estimated marginal means, these are unadjusted means.

Next, I investigated potential differences among subpopulation in terms of self-regulation (Research Question 1d). To determine if I needed to account for class-level (level two) differences, I examined the ICC for self-regulation using a random intercepts model. Class-level differences were small and not significant (ICC = .01, \( p = .674 \)) for this outcome variable across course sections. Because HLM was not needed for this variable, I used ANCOVA to investigate these differences. Levene’s test of equality of error variances was not significant (\( p = .825 \)) for self-regulation, indicating homogeneity of variance among subpopulations for this outcome. Controlling for gender and the pre-measure of self-regulation there was not a significant main effect for first-generation
status \( (F[1, 226] = .121, p = .729, \eta^2_p = .001) \), ethnicity \( (F[1, 226] = .362, p = .548, \eta^2_p = .002) \), nor conditionally-admitted status \( (F[1, 226] = .554, p = .458, \eta^2_p = .003) \) on the post-measure for self-regulation. Table 3 displays the estimated marginal means. As illustrated in the table, all students reported similar and moderately high levels of self-regulation.

**Research Question 2**

The second research question investigated potential gender differences in levels of motivation, self-regulation, and transformative experience at the end of the semester, controlling for initial levels of these variables. That is, the question investigated whether the FYE course was differentially effective for males and females in terms of these motivation outcomes.

I first investigated potential gender differences in terms of goal orientation (Research Question 2a). Because HLM was not needed for any of the goal orientation variables (see prior results), I used ANCOVA to investigate gender differences. I conducted separate ANCOVAs for mastery goal orientation, performance-approach goal orientation, and performance-avoid goal orientation. Levene’s test of equality of error variances was not significant (\( p = .693 \)) for mastery goal orientation, indicating homogeneity of variance between males and females for these outcomes. Levene’s test was significant for both performance-approach (\( p = .035 \)) and performance avoid (\( p = .016 \)) goal orientations, suggesting non-homogeneity of variance for males and females on this outcome. To address this issue, I transformed the variables. When an inverse transformation was used, Levene’s test for performance-approach (\( p = .805 \)) and performance-avoid (\( p = .191 \)) were no longer significant and I proceeded conducting an ANCOVA with these transformed variables.
Controlling for the pre-measure of mastery goal orientation, there was not a significant main effect for gender on the post-measure of mastery goal orientation, $F(1, 231) = .118, p = .731, \eta_p^2 = .001$. Table 4 displays the estimated marginal means. As illustrated in the table, both male and female students endorsed a similar and relatively high level of mastery goal orientation. Controlling for the pre-measure of performance-approach goal orientation, I found a significant main effect for gender on the post-measures of performance-approach goal orientation, $F(1, 231) = 8.885, p = .003, \eta_p^2 = .037$. As a follow-up, to determine any interactive effects among the other subpopulations (first-generation, ethnic minority, and conditionally-admitted), I investigated all two-way interactions between the underserved groups. No statistically significant interactions were found. Table 4 displays the estimated marginal means\(^2\). As illustrated in the table, male students reported a higher end-of-semester performance-approach goal orientation than female students, controlling for their initial levels of performance-approach goal orientation. According to Cohen (1988), the effect size was small to medium.\(^3\) Controlling for the pre-measure of performance-avoid goal orientation, I found a significant main effect for gender on the post-measure for performance-avoid orientation, $F(1, 231) = 5.664, p = .018, \eta_p^2 = .024$. As a follow-up, to determine any interactive effects among the other subpopulations (first-generation, ethnic minority, and conditionally-admitted), I investigated all two-way interactions between the underserved groups. No statistically significant interactions were found. Table 4 displays the estimated marginal means from the non-transformed variable ANCOVA analysis. The results were the same for this analysis in that there was a main effect for gender.

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\(^2\) So that these means would be interpretable, I displayed the estimated marginal means from the non-transformed variable ANCOVA analysis. The results were the same for this analysis in that there was a main effect for gender.

\(^3\) Partial eta squared ($\eta_p^2$) is the proportion of variance explained by an effect and that effect plus its associated error variance. Cohen (1988) suggests .01 = small, .06 = medium, and .14 = large.
estimated marginal means\(^4\). As illustrated in the table, male students reported a higher end-of-semester performance-avoid goal orientation than female students, controlling for their initial levels of performance-avoid goal orientation. According to Cohen (1988), the effect size was small.

Table 4

*Descriptive Statistics by Gender*

<table>
<thead>
<tr>
<th>Item</th>
<th>Male (n = 337)</th>
<th>Female (n = 337)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SE)</td>
<td>Mean (SE)</td>
</tr>
<tr>
<td>Motivation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastery GO(^1)</td>
<td>4.293 .055</td>
<td>4.270 .037</td>
</tr>
<tr>
<td>Performance-Approach GO(^1)</td>
<td>3.096** .079</td>
<td>2.743** .053</td>
</tr>
<tr>
<td>Performance-Avoid GO(^1)</td>
<td>3.187* .082</td>
<td>2.891* .055</td>
</tr>
<tr>
<td>Self-Efficacy(^1)</td>
<td>4.087 .056</td>
<td>3.999 .038</td>
</tr>
<tr>
<td>Self-Regulation(^1)</td>
<td>3.701 .047</td>
<td>3.734 .032</td>
</tr>
<tr>
<td>Transformative Ex.(^2)</td>
<td>.819 1.84</td>
<td>.866 1.66</td>
</tr>
<tr>
<td>Achievement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>End-of-Semester GPA(^1)</td>
<td>2.747 .096</td>
<td>2.924 .068</td>
</tr>
<tr>
<td>Persistence(^3)</td>
<td>90.30%</td>
<td>89.30%</td>
</tr>
</tbody>
</table>

*Note.\(^1\) Estimated marginal means from the ANCOVA output.\(^2\) Because HLM analysis does not provide estimated marginal means, raw means are listed.\(^3\) Percentages reported are not controlling for index score; see discussion of odds ratios. *\(p < .05\). **\(p < .01\).*

Next, I investigated potential gender differences in terms of self-efficacy (Research Question 2b). Because HLM was not needed for this variable (see prior results), I used ANCOVA to investigate gender differences. Levene’s test of equality of
error variances was significant ($p = .026$) for self-efficacy suggesting non-homogeneity of variance for males and females on this outcome, therefore, I transformed the variable. When an inverse transformation was used, Levene’s test was no longer significant ($p = .059$) and I proceeded conducting an ANCOVA with this transformed variable. Controlling for the pre-measure of SE, there was not a significant main effect for gender on the post-measure for self-efficacy, $F(1, 231) = 1.117, p = .292, \eta_p^2 = .005$. Table 4 displays the estimated marginal means. As illustrated in the table, both male and female students endorsed a similar and relatively high level of self-efficacy.

Next, I investigated potential gender differences in terms of transformative experience (Research Question 2c). Specifically, an ICC of .18 indicated 18% of the variance is between classes and needs to be accounted for. Therefore, I used a hierarchical linear model to analyze the data where students (level one) were nested within classes (level two). Controlling for the level 2 variables (teacher experience, class type, and first-generation/ethnicity composition) and initial levels of transformative experience, there was not a significant difference between male and female students in end-of-semester levels of transformative experience ($p = .543, b = -.168, t = -.609$). Table 4 displays the mean Rasch scores. As HLM does not output estimated marginal means, these are unadjusted means.

Next, I investigated potential gender differences in terms of self-regulation (Research Question 2d). Because HLM was not needed for this variable (see prior results), I used ANCOVA to investigate gender differences. Levene’s test of equality of error variances was not significant ($p = .656$) for self-regulation indicating homogeneity

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5 I displayed the estimated marginal means from the non-transformed variable ANCOVA analysis. The results were the same for this analysis in that there was not a main effect for gender.
of variance between males and females for this outcome. Controlling for the mid-measure of self-regulation, there was not a significant main effect for gender on the post-measure for self-regulation, \( F(1, 213) = .348, p = .556, \eta^2_p = .002 \). Table 4 displays the estimated marginal means. As illustrated in the table, both male and female students endorsed a similar and moderate to high level of self-regulation.

**Research Question 3**

The third research question investigated potential differences by subpopulations (first-generation status, ethnic minority, and conditionally-admitted) in end of the semester GPA, controlling for gender and students’ index score. That is, the question investigated whether the FYE course was differentially effective for first-generation students, ethnic minority students, and conditionally-admitted students in terms of GPA. To determine if I needed to account for class-level (level two) differences, I examined the ICC for GPA using a random intercepts model. Class-level differences were small and not significant (ICC = .07, \( p = .102 \)) for this outcome variable across course sections. Because HLM was not needed for this variable, I used ANCOVA to investigate differences by subpopulation.

Levene’s test of equality of error variances was significant (\( p = .007 \)) for this outcome, suggesting non-homogeneity of variance among subpopulations. I then chose to conduct separate analyses for each subpopulation for two reasons. One, there was a large sample size difference for conditionally-admitted status but not the other subpopulation variables, suggesting the non-homogeneity problem may only apply to the conditional admitted status variable. Second, a marginally significant difference was found for first-generation status (\( p = .062 \)) and a significant difference was found for conditionally-admitted status (\( p < .000 \)), suggesting separate analyses were needed to understand
independent effects. In these separate models, Levene’s test for GPA was no longer significant for first-generation status ($p = .225$), ethnicity ($p = .234$), and conditionally-admitted status ($p = .061$) indicating homogeneity of variance for this outcome. The homogeneity of regression slopes assumption was met for most analyses. In cases where it was not met, I illustrate the covariate by independent variable interaction and discuss the results from an aptitude-treatment perspective.

Controlling for gender and students’ index score, there was a significant main effect for first-generation status on the post-measure for GPA, $F(1, 322) = 6.083, p = .014, \eta^2_p = .019$. However, this result was qualified by finding a significant interaction ($p = .019$) between the covariate (index score) and first-generation. To make sense of this interaction, I created high and low groups by dividing the pre-survey performance-avoid data into thirds and dropping the middle third. As Figure 4 illustrates, both high and low groups are fairly similar, however, there is a greater difference in GPA for students who start off low initially. This could suggest that the intervention is not as effective at mitigating GPA differences for first-generation students who start off low as it is for students who begin in the high group. However, the differences are slight and not much weight should be placed on this interaction.
In addition, as a follow-up, to determine any interactive effects among ethnic minority, conditionally-admitted, I investigated all two-way interactions between the underserved groups. No statistically significant interactions were found. Table 3 displays the estimated marginal means. As illustrated in the table, non-first-generation students showed a higher end-of-semester GPA than first-generation students. The effect size was small. Controlling for gender and students’ index score, there was no significant main effect for ethnicity on the post-measure for GPA, $F(1, 319) = 3.372, p = .067, \eta^2_p = .010$. Table 3 displays the estimated marginal means. As illustrated in the table, all students showed a similar end-of-semester GPA. Controlling for gender and students’ index score, there was a significant main effect for conditionally-admitted status on the post-measure for GPA, $F(1, 322) = 18.184, p = .000, \eta^2_p = .053$. As a follow-up, to determine any interactive effects among ethnic minority, conditionally admitted, I investigated all two-way interactions between the underserved groups. No statistically significant interactions
were found. Table 3 displays the estimated marginal means. As illustrated in the table, non-conditional-admitted students showed a higher end-of-semester GPA than conditionally-admitted students. The effect size was medium.

**Research Question 4**

The fourth research question investigated potential gender differences in end of the semester GPA, controlling for students’ index score. That is, the question investigated whether the FYE course was differentially effective for males and females in terms of GPA. Because HLM was not needed for this variable (see prior results), I used ANCOVA to investigate gender differences. Levene’s test of equality of error variances was significant ($p = .043$) for GPA, suggesting non-homogeneity of variance for males and females on this outcome, therefore, I transformed the variable. When an inverse transformation was used, Levene’s test for GPA was no longer significant ($p = .203$) and I proceeded conducting an ANCOVA with this transformed variable. There was not a significant main effect for gender on the post-measure of GPA, $F(1, 322) = .566$, $p = .453$, $\eta^2_p = .002$. Table 4 displays the estimated marginal means. As illustrated in the table, both male and female students had a similar and moderate end-of-semester GPA. However, there was a significant interaction between the covariate (index score) and gender ($p = .002$). To make sense of this interaction, I created high and low GPA groups by dividing the index score data into thirds and dropping the middle third, as Figure 5 illustrates, males and females in the low GPA group were fairly similar compared to the difference in the high group. This could suggest the intervention is more effective at mitigating differences when students have a lower, incoming GPA. It also suggests the

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6 I displayed the estimated marginal means from the non-transformed variable ANCOVA analysis. The results were the same for this analysis in that there was not a main effect for gender.
intervention may not be fully mitigating the gender differences for students in the high group.

**Figure 5.** Aptitude by treatment interactions for GPA and gender. Note: Low = bottom third; high = top third.

**Research Question 5**

The fifth research question investigated potential differences by subpopulations (first-generation status, ethnic minority, and conditionally-admitted) in terms of persistence. That is, the question investigated whether the FYE course was differentially effective for first-generation students, ethnic minority students, and conditionally-admitted students in terms of persistence. To determine if I needed to account for class-level (level two) differences, I examined the ICC for persistence using an unconditional model. Class-level differences were not significant (ICC = .088) for this outcome variable across course sections. Because HLM was not needed for this variable, I used logistic regression to investigate differences by subpopulations. I first conducted a logistic regression with all three subpopulation variables in the model. Controlling for index
score, first-generation status was marginally significant ($p = .054, e^b = 2.208$) and the other two subpopulation variables were not. Consequently, I conducted follow-up logistic regression analyses separately for each subpopulation variable. In these individual logistic regressions, controlling for index score, first-generation status was significant ($p = .029, e^b = 2.301$), indicating that non-first-generation students were 2.301 times more likely to persist than first-generation students. As a follow-up, to determine any interactive effects among ethnic minority, conditionally-admitted, I investigated all two-way interactions between the underserved groups. No statistically significant interactions were found. Controlling for index score, ethnicity was not significant ($p = .461, e^b = .756$). Controlling for index score, conditionally-admitted status was not significant ($p = .829, e^b = 1.104$). Table 3 presents the persistence percentages for each group (unadjusted for index score).

**Research Question 6**

The sixth research question investigated potential gender differences in persistence as evidenced by next semester enrollment. That is, the question investigated whether the FYE course was differentially effective for males and females in terms of persistence. Because HLM was not needed for this variable (see prior results), I used a logistic regression to investigate gender differences. Controlling for index score, no significant effect for gender was found, ($p = .737, e^b = .875, B = -.133, S.E. = .396$) and the odds for male students persisting were .09 times greater than for males. As illustrated in Table 4, a similar percentage of male and female students persisted.
CHAPTER V

DISCUSSION AND CONCLUSIONS

Research on student retention and graduation rates has helped to identify populations of students who are at much greater risk of dropping out. Historically, first-generation students and ethnic minority students are among a few of the populations that face impediments to their success, hence, contributing to the achievement gap (Huerta et al., 2013; Martinez et al., 2009; Pascarella et al., 2004; Skomsvold, 2015; U.S. Department of Education, National Center for Education Statistics, 2007). These students are matriculating into universities at a rate that puts them on the trajectory to soon be the majority of students we serve. One effective initiative is a quality first-year experience program, which have shown to have positive impacts on student GPA and retention (Goodman & Pascarella, 2006; Tinto, 2006-2007). If first-year programs are effective mediators for traditional student success, they are likely to be more valuable for underserved students. The primary purpose of this study was to evaluate the effectiveness of FYE 101 for three underserved student populations in terms of motivation, self-regulation, and academic achievement while also exploring potential gender differences.

Highlights of the Findings

Findings from this study revealed no significant differences for underserved students in terms of motivation or self-regulation. However, there were a few significant differences in first-generation and conditionally-admitted status in terms of academic achievement. Findings from this study did reveal a few significant gender differences in
terms of motivation but overall, did not reveal any gender differences for self-regulation. In addition, the findings showed no significant gender differences in terms of academic achievement. With the exception of the transformative experience outcome, class-level variance (class type, class composition, and instructor experience) was small and did not need to be accounted for in the analysis.

As expected, many of the results from this study did not align with prior research. There is consistent research on the disparities among underserved students, however it is predominately limited to the context of overall performance in college and not of specific students participating in an intervention such as a first-year experience course. Therefore, finding little differences among students suggests that the FYE 101 course is effective at mitigating potential differences and disparities.

**First Generation**

Findings from this study show no significant difference in first-generation status in terms of motivation or self-regulation, controlling for initial levels of these variables. While many studies explored generational status in terms of self-esteem, self-efficacy, and intrinsic motivation, huge gaps exist for goal orientation, transformative experience, and self-regulation. The findings for self-efficacy from this study are not consistent with prior research where first-generation students report lower levels of self-efficacy than non-first-generation students (Gibbons & Borders, 2010; Hicks, 2003; Wang & Castañeda-Sound, 2008). Consequently, it may be that the FYE course is beneficial in mitigating negative outcomes for first-generation students.

Consistent with prior research, findings from this study confirmed that end-of-semester GPA was significantly higher for traditional students than for first-generation students, controlling for incoming index scores. Prior research shows that first-generation
students earn lower grades than their non-first-generation students (Huerta et al., 2013; Martinez et al., 2009; Pascarella et al., 2004).

In addition to GPA, findings from the current study also aligned with the research in terms of persistence for first-generation students. Prior research shows first-generation student graduations rates have dropped substantially compared to students who had a parent with a bachelor degree (Lauff & Ingels, 2013) and research consistently suggests that these students are at a higher risk of dropping out than their counterparts (Ishitani, 2006; Pascarella et al., 2004; Terenzini et al., 1996). The results from this study revealed that traditional students had significantly higher rates of persistence into the next semester than did first-generation students, controlling for incoming index scores. Thus, it appears that the FYE course is not able to fully mitigate the trend of first-generation students displaying lower GPA and less persistence. The course might still be helping these students to some degree but this cannot be concluded from the data.

**Ethnic Minority**

The findings from this study revealed no significant difference between White and ethnic minority students in terms of motivation or self-regulation, controlling for initial levels of these variables. While many studies explored ethnicity in terms of self-esteem, self-efficacy, and intrinsic motivation, huge gaps exist for goal orientation, transformative experience, and self-regulation. The literature on self-efficacy and ethnicity is inconclusive where some studies report minority students having lower sense of self-efficacy (Cavazos et al., 2010) and some surprisingly finding similar if not higher levels of self-efficacy (Edman & Brazil, 2007). Further research is indeed needed in the area of overall motivation and ethnicity and the role the FYE courses may play in supporting positive motivation patterns among ethnic minority students.
Controlling for incoming index scores, no significant difference was found in terms of achievement (GPA and persistence) among ethnicity, which is not consistent with the literature. The research shows that ethnic minority students are less likely than White students to both enroll and persist in college (Chen & Carroll, 2005; U.S. Department of Education, National Center for Education Statistics, 2004). Thus, the FYE course may be having a positive impact on ethnic minority student achievement and persistence.

**Conditionally-Admitted Students**

The findings from this study revealed no significant difference between regular and conditionally-admitted students in terms of motivation or self-regulation, controlling for initial levels of these variables. As with generational status and ethnicity, huge research gaps exist for goal orientation, transformative experience, and self-regulation. The FYE course may be mitigating negative patterns but more research is needed.

Controlling for index score, there was a significant difference with end-of-semester GPA for conditionally-admitted students. The findings from this study align with prior research that show students who enter college under a conditionally-admitted status tend to have lower GPAs than regularly admitted students (Adebayo, 2008; Stewart & Heaney, 2013). The findings from this study revealed no significant different in persistence into the next semester between conditionally and regularly-admitted students. Thus, the FYE course may be mitigating negative patterns of persistence for conditionally-admitted students, however not able to fully mitigate the trend of lower GPA.
Gender

Findings from the present study show that while there were not significant gender differences for mastery orientation, there were for both performance-approach and performance-avoid orientations, controlling for initial levels of these variables. Consistent with previous literature, males reported significantly higher levels of both performance-approach and performance-avoid orientations than females (Cavallo et al., 2004; D’Lima et al., 2014). Thus, the FYE course may play a role in supporting mastery learning among gender but may not be fully mitigating patterns of performance-avoid and approach learning orientations for men.

Findings from this study did not reveal significant gender differences for self-efficacy, transformative experience or self-regulation, controlling for initial levels of these variables. In terms of self-efficacy, the findings were not consistent with previous studies that show males report higher levels of self-efficacy than females (Cavallo, et al., 2004; Jacobs et al., 2002). As with other motivational research, huge research gaps exist for gender differences in terms of goal orientation, transformative experience, and self-regulation. The results for motivation and gender were mixed, while it does appear that the FYE course is beneficial in mitigating negative self-efficacious outcomes, there are still significant differences in learning orientations.

In addition, the findings showed no significant gender difference in terms of academic achievement (GPA and persistence), controlling for incoming index scores. This does not align with the current research where literature show females have surpassed males in college persistence (Ewert, 2012; Hussar & Bailey, 2011; King, 2006; Snyder et al., 2009). Additionally, the U.S. Department of Education, National Center for Education Statistics (2017) latest report shows not only are the graduation rates are
higher for females than males they are also higher for females than males among racial
groups. The results from this study do not align with previous research where females are
earning higher grades than males (Conger & Long, 2010; Spitzer, 2000). Thus, it appears
that the FYE course is effective in mitigating the gender differences in terms of lower
GPA and less persistence.

**Limitations**

Although college credit is given for this course, it is voluntary for most students.
Students enrolled in the CHE/TRiO section \((n = 30)\) were required to take FYE 101,
however, they represent less than eight percent of students taking FYE 101. A limitation
of this study was a potential selection bias, meaning there may be categorical differences
among students who self-select into a program which is aimed at increasing their chances
for college success.

Also, attrition among the three data collection time points may have affected this
study. While many completed the survey at varying times points, only 60% completed all
three surveys.

Because there was little diversity within the ethnic groups at this university,
hence, power issues, I chose to group all of the ethnic minorities together. This did not
allow or account for potential differences among ethnic groups and future research could
investigate specific ethnic minority group differences.

All of the data collected were from students enrolled in the FYE course.
Therefore, conclusions about the relative effectiveness of the FYE course for different
populations are somewhat tentative. Even though I controlled for initial levels of the
outcome variables, factors beyond the FYE course could be influencing the results.
Future research could follow up on the current study by including a control group.
One factor that could influence similarity among all the sections in FYE 101 could be the rigor of implementation of the curriculum. FYE 101 has a robust curriculum and textbook that is anchored in several learning and motivational theories and is standardized across all the sections. The instructors receive high quality training that promote student-centered learning practices and academic engagement (Swanson et al., 2015; Vaughan et al., 2018). Research on existing FYE programs show how these programs vary vastly in terms of duration, content, and overall implementation (Permzadian & Credé, 2016). In addition, I accounted for any shared variance by class type (specialized or not), class composition (percent ethnic minority and first-generation), and instructor experience. The preliminary results showed that overall, there was not a significant shared variance among classes/sections regardless class type, class composition, and class instructor. Thus, it is unlikely variation in implementation of the FYE curriculum influenced the results.

The way persistence was operationally defined (next semester enrollment) may not provide an overall accurate picture of student persistence. It seems that in order to truly detect accurate differences in persistence a more longitudinal approach would be a better fit. To address disparities in attainment, Bowen, Chingos, and McPherson (2009) postulate that semester-to-semester differences and even into first year of college may appear small and assert we must employ longitudinal research strategies to truly capture these outcomes. Lastly, students who were identified as not persisting into the next semester does not account for the difference between drop-out or students that transferred to another university.

Similarly, in terms of persistence, if a student got a zero GPA, meaning they failed all of their courses, they have the option to stay enrolled in the university.
However, these students are unlikely to actually persist. Thus, some students categorized as “persisting” by the university may not have actually taken course the following semester. However, the number of students in the current sample in this situation was quite small.

Another limitation of this study was the way in which generational students are grouped. The agreed upon determination for first-generation status in most fields is having neither parent who hold a four-year degree. This means that non-first-generation students may only have one parent who holds a degree, however, this does not take into account these incoming college students who come from one-parent households. If a student has an absent or uninvolved parent that holds a degree, the question of access to cultural capital needs to be addressed. This is a huge implication because if the classification of first-generation is underreported as I suspect it is, the achievement gap between generational status would be even greater.

**Implications**

As expected, many of the results from this study did not align with prior research. There is consistent research on the disparities among underserved students, however it is predominately limited to the context of overall performance in college and not of specific students participating in an intervention such as a first-year experience course. Therefore, finding little differences among students suggests that the FYE 101 course is effective at mitigating potential differences and disparities. This justifies a need to increase enrollment and participation in FYE programs.

The results from this study align with generational research and the need to explore interventions to further support first-generation and conditionally-admitted students who are enrolling at greater rates than ever before. Historically, data show a
disparity in achievement for first-generation students and while interventions have been effective in narrowing this achievement gap, nonetheless it still exists. First-year programs attempt to support these students, however, the concerns associated with academic achievement might expand beyond the content covered in FYE courses. To better serve and retain this fast-growing population, it is noteworthy to consider tailoring classes and curriculum that address some of the salient impediments they face.

**Directions for Future Research**

A direction for future research would be to compare the same outcomes between students who participate in FYE 101 versus students who do not participate. The findings from this study suggest that the intervention is effective at mitigating some academic and motivational outcomes and the next area to explore would be how this compares to a control group.

Another area to explore further would be to look at conditionally-admitted students longitudinally. The findings from this study show there is still a significant difference in GPA for these students within the intervention program. Although we know they tend to be more academically unprepared, we do not know the point at which they catch up to their peers. Perhaps supporting them during their first semester is not enough.

Because low GPA or ACT scores typify conditionally-admitted students, they are also more likely to be first-generation, low SES and/or ethnic minority. These interactions could help to explain the achievement gap in terms of GPA. Future research involving larger samples could look at three-way interactions and the intersection of these underserved groups with gender. The research shows how often, students have intersecting factors that put them more at risk for academic failure and when a student
has more than one presenting factor, the risks compound. Looking at interactions among intersectionality is a prevalent area for future research.

Another direction for future research as it pertains to generational status would be to explore the impact of stereotype threat. The mere fact that one identifies as first-generation could induce anxiety around competence, self-esteem, and the overall ability to perform and persist. The best way to reduce and counter this threat is to teach students that intelligence is malleable and not fixed, mindset is something many FYE programs foster and it would be interesting to explore these potential effects.

The last area for future research would be to explore gains or growth in motivation, self-regulation, and achievement by subpopulations. For this study, I was interested in whether FYE 101 was equally effective for varying outcomes, however, it would be useful to explore potential differences across time points.

**Conclusion**

Unfortunately, there are a disproportionate number of students entering college who will actually complete their education, nearly half of these students come from underrepresented backgrounds. We also know that attrition rates are high for students during their first year, nearly one in four students will leave college during or after their freshman year. Fortunately, one intervention designed to support incoming students is a first-year experience course, which have been effective at mobilizing students to be diligent stewards of their college experience. Furthermore, these courses show to positively influence overall student engagement and academic achievement.

Another area that mediates student success is achievement motivation. Curricula that are grounded in motivational theories contribute to student academic success and motivation research shows that students’ perceptions and beliefs about learning influence their effort, engagement, approach to learning, and persistence. Unfortunately, research
on the efficacy of motivation constructs and their benefit to specific underserved students is lacking.

This study explored potential motivation, achievement, and gender differences among students in an existing first-year program. This program was chosen because (a) it has a diverse population and a large number of underserved students, and (b) it fosters content that is grounded in motivational research, and (c) it has had a positive impact on increased student GPA and fall-to-fall persistence.

The results from this study help to establish the effectiveness of this type of FYE course for different populations of students. Overall, I did not find many gender or underserved population differences on the outcomes assessed. Specifically, no differences were found for the self-efficacy, transformative experience, or self-regulation outcomes. Given past findings that FYE courses are beneficial for such outcomes (Goodman & Pascarella, 2006; Jessup-Anger, 2011), these results suggest that the course is equally effective for all students in terms of these outcomes. The results for achievement and persistence were more mixed. No differences between male and female were found on these outcomes. Nor were there differences between ethnic minority and non-ethnic minority students. However, first-generation students demonstrated lower GPA and persistence compared to non-first-generation students and conditionally-admitted students demonstrated lower GPA than non-conditionally-admitted students. Past research confirms the effectiveness of the FYE course in supporting GPA and persistence. Thus, the current study results suggest the course equally supports these outcomes for both male and female students as well as for White and ethnic minority students. However, the course may not as effectively support these outcomes for first-generation and conditionally-admitted students. It is possible that the course is supporting
these students on these outcomes, but just not at the level needed to put them on par with other students. Overall, past research has established the effectiveness of an FYE course and the current research suggests such a course is generally effective for all students but more consideration may need to be given for how to further support first-generation and conditionally-admitted students.
REFERENCES


ACT. (2004). *ACT national data release*. Iowa City, IA.: ACT.


APPENDIX A

CONSENT FORM
CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title:  Group Differences in Motivation and Achievement Outcomes in a First-Year Experience Seminar

Researchers: Selani Flores, Ph.D. Student in Educational Psychology
Email: selani.flores@unco.edu

Kevin Pugh, Ph.D.
Email: kevin.pugh@unco.edu

The purpose of this research study will be to understand the effectiveness of the UNIV 101 course for different groups of people in terms of motivation and academic outcomes. Specifically, we are interested in understanding students’ different approaches to learning, self-efficacy, experiences with class content outside of school, and student achievement. If you agree to participate, you will be asked to answer online survey questions (there will also be a paper version to complete if you prefer) about these aspects three times throughout the current semester. In total, the surveys will take approximately 30 minutes of your time and will take place during your regularly scheduled class time at the beginning of the semester, four weeks into the semester, and at the end of the semester. Primary researchers will also access your GPA from the beginning of this semester and at the conclusion of the semester.

Identifying information will be removed from all data and results of the study will be presented in aggregate form only (e.g., averages). Thus, we are seeking to maximize confidentiality, but understand confidentiality cannot be guaranteed. Original responses to the surveys will be kept on password protected computers and deleted two years after the completion of the study.

There are no foreseeable risks or benefits for participating in the study. Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to
retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact Sherry May, IRB Administrator, Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910

Participant’s Signature

Date

Researcher’s Signature

Date
APPENDIX B

INSTITUTIONAL REVIEW BOARD APPROVAL
DATE:       July 10, 2018
TO:          Selani Flores, MA
FROM:        University of Northern Colorado (UNCO) IRB
PROJECT TITLE:       [1258967-1] Group Differences in a First Year Experience Seminar
SUBMISSION TYPE:     New Project
ACTION:       APPROVED
APPROVAL DATE:   June 26, 2018
EXPIRATION DATE:  June 26, 2022
REVIEW TYPE:     Exempt Review

Thank you for your submission of New Project materials for this project. The University of Northern Colorado (UNCO) IRB has APPROVED your submission. All research must be conducted in accordance with this approved submission.

This submission has received Exempt Review based on applicable federal regulations.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of June 26, 2022.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Nicole Morse at 970-351-1910 or Nicole.Morse@unco.edu. Please include your project title and reference number in all correspondence with this committee.

Thank you for a clear and thorough IRB application. Your protocols and materials are verified/approved exempt.

Best wishes with this research and don’t hesitate to contact me with any IRB-related questions or concerns.

Sincerely,

Dr. Megan Stellino, UNCO IRB Co-Chair
APPENDIX C

DEMOGRAPHIC QUESTIONNAIRE
DEMOGRAPHIC QUESTIONNAIRE

Please enter your bear #: __________________________

If you do not know or are unsure of your Bear #, please enter your first and last name here. This is so we can match your survey responses. (Your name will be replaced with an ID).

Gender

☐ Male
☐ Female
☐ Non-Specified

Age: __________

Ethnicity

☐ Caucasian
☐ Latino
☐ Black/African American
☐ Asian/Pacific Islander
☐ Native American
☐ Middle Eastern
☐ Other, please specify: _______________________

Year in School

☐ Freshman
☐ Sophomore
☐ Junior
☐ Senior

Are you a transfer student? If yes, how many hours are you transferring to UNC?

☐ Yes  # of hours: __________
☐ No

Are you a first-generation student (neither of your parents holds a bachelor degree)?

☐ Yes
☐ No
Please indicate the highest level of education attained by your mother:

- Less than 12th grade and No-GED
- GED
- High school diploma
- Some college
- Bachelor’s degree
- Advanced graduate degree (e.g., Master’s, Law Degree, MD, Ph.D., etc.)
- Don’t Know

Please indicate the highest level of education attained by your father:

- Less than 12th grade and No-GED
- GED
- High school diploma
- Some college
- Bachelor’s degree
- Advanced graduate degree (e.g., Master’s, Law Degree, MD, Ph.D., etc.)
- Don’t Know

Who is your UNIV 101 instructor?

________________________

What section of UNIV 101 are you attending?

________________________

What days of the week does your UNIV 101 course meet?

________________________

What time of day does your UNIV 101 course meet?

________________________

Note: The following question will be asked at the end of the semester:

Please indicate the number of UNIV 101 courses missed this semester:

________________________
APPENDIX D

GOAL ORIENTATION MEASURE
GOAL ORIENTATION MEASURE

Note: Items for the goal orientation and self-efficacy survey will be intermixed and randomized. Items will be the same for the pre and post surveys. Students will respond on a 5-point Likert scale with 1 being strongly disagree and 5 being strongly agree.

Survey introduction: The following questions ask about your learning goals and beliefs. There are no right or wrong answers. Please be as honest as possible in your responses. Let us know what you really think, not what you believe should be the right answer.

For each statement please indicate the level to which you agree or disagree.

Mastery Orientation

1. It’s important to me that I learn a lot of new concepts in my college classes.
2. One of my goals in my college classes is to learn as much as I can.
3. One of my goals is to master a lot of new skills this year.
4. It’s important to me that I thoroughly understand my college class work.
5. It’s important to me that I improve my skills this year in my college classes.

Performance Approach

1. It’s important to me that other students in my college classes think I am good at my class work.
2. One of my goals is to show others that I’m good at my college class work.
3. One of my goals is to show others that my college class work is easy for me.
4. One of my goals is to look smart in comparison to the other students in my college classes.
5. It’s important to me that I look smart compared to others in my college classes.

Performance Avoid

1. It’s important to me that I don’t look stupid in my college classes.
2. One of my goals is to keep others from thinking I’m not smart in my college classes.
3. It’s important to me that teachers in my college classes don’t think that I know less than others.
4. One of my goals in my college classes is to avoid looking like I have trouble doing the work.
APPENDIX E

SELF-EFFICACY MEASURE
SELF-EFFICACY MEASURE

Note: Items for the goal orientation and self-efficacy survey will be intermixed and randomized. Items will be the same for the pre and post surveys. Students will respond on a 5-point Likert scale with 1 being strongly disagree and 5 being strongly agree.

Survey introduction: The following questions ask about your learning goals and beliefs. There are no right or wrong answers. Please be as honest as possible in your responses. Let us know what you really think, not what you believe should be the right answer.

For each statement please indicate the level to which you agree or disagree.

Self-Efficacy

1. I'm certain I can master the skills taught in my college courses.
2. I'm certain I can figure out how to do the most difficult class work in my college courses.
3. I can do almost all of the work in my college courses if I don't give up.
4. Even if the work is hard in my college courses, I can learn it.
5. I can do even the hardest work in my college courses if I try.
APPENDIX F

TRANSFORMATIVE EXPERIENCE QUESTIONNAIRE
TRANSFORMATIVE EXPERIENCE QUESTIONNAIRE

Note: Items for the transformative experience survey will be the same for the pre and post surveys. Students will respond on a 4-point Likert scale with 1 being strongly disagree and 4 being strongly agree.

Survey introduction: The following questions ask about your experience with this specific course (UNIV 101). There are no right or wrong answers. Please be as honest as possible in your responses. Let us know what you really think, not what you believe should be the right answer. Please read each of the following items carefully, think about how it relates to your experience with the UNIV 101 course, and then indicate the level to which to agree or disagree:

1. During UNIV 101 class, I talk about the course content with other students or the teacher.
2. I think about the UNIV 101 course content when I am attending or studying for other courses.
3. I talk outside of UNIV 101 class about the course content.
4. During UNIV 101 class, I think about the course content.
5. I enjoy talking about the UNIV 101 course content.
6. Outside of UNIV 101 class, I think about the course content.
7. I find myself thinking about the UNIV 101 course content in my life outside of school.
8. During UNIV 101 class, I use the knowledge I’ve learned about being a successful college student.
9. Outside of UNIV 101 class, I use the knowledge I’ve learned about being a successful college student.
10. I use the stuff I’ve learned in UNIV 101 even when I don’t have to.
11. I look for chances to use knowledge from UNIV 101 in my life outside of school.
12. When I am attending other courses, I think about UNIV 101 course content.
13. When I am working on homework or a project for other courses, I tend to think about UNIV 101 course content.
14. If I am struggling with a difficult assignment or preparing for a hard test, then I **think** about UNIV 101 course content.

15. When I study for other courses now, I can’t help but think about UNIV 101 course content.

16. During UNIV 101 class, I notice examples of effective learning and study strategies.

17. I notice examples outside of class of effective learning and study strategies.

18. I look for examples outside of class of effective learning and study strategies.

19. Learning UNIV 101 course content is useful for my future studies or work.

20. Knowledge of UNIV 101 course content helps to make sense of the world around me.

21. Knowledge of UNIV 101 course content is useful in my current life outside of school.

22. I find that knowledge of UNIV 101 course content makes my current, out-of-class experience more meaningful and interesting.

23. Knowledge of UNIV 101 course content makes my university experience much more interesting.

24. In UNIV 101 class, I find it interesting to learn about learning, motivation, and study strategies.

25. I think learning, motivation, and study strategies are interesting topics.

26. I find it interesting in class when we talk about learning, motivation, and study strategies.

27. I find it exciting to think outside of class about learning, motivation, and study strategies.
APPENDIX G

SELF-REGULATION MEASURE
SELF-REGULATION MEASURE

Note: Items for self-regulation will be randomized. Items will be the same for the pre and post surveys. Students will respond on a 5-point Likert scale with 1 being strongly disagree and 5 being strongly agree.

Survey introduction: The following questions ask about your learning strategies and study skills in college. There are no right or wrong answers. Please be as honest as possible in your responses. Let us know what you really do, not what you think you should do.

For each statement please indicate the level to which you agree or disagree.

Self-Regulation Items from MSLQ

1. Before I study new course material thoroughly, I often skim it to see how it is organized.

2. I ask myself questions to make sure I understand the material I have been studying in this class.

3. When studying for this course I try to determine which concepts I don't understand well.

4. When I study for this class, I set goals for myself in order to direct my activities in each study period.

5. I usually study in a place where I can concentrate on my course work.

6. I make sure I keep up with the weekly readings and assignments for this course.

7. I make good use of my study time for this course.

8. I work hard to do well in this class even if I don't like what we are doing.

9. When course work is difficult, I give up or only study the easy parts. (R)

10. Even when course materials are dull and uninteresting, I manage to keep working until I finish.

11. I ask the instructor to clarify concepts I don't understand well.

12. I regularly participate in class discussions in most of my college classes.