ACADEMIC PEER MENTORSHIP AND TRANSITIONING COLLEGE WRITERS: A
CLOSER LOOK AT SUPPORT FOR DEVELOPMENTAL EDUCATION

by

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A dissertation submitted to the Graduate Faculty of the
University of Colorado Colorado Springs
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy
Department of Leadership, Research, and Foundations
2018
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Date November 12, 2018
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Academic Peer Mentorship and Transitioning College Writers: A Closer Look at Support for Developmental Education

Dissertation directed by Associate Professor Sylvia Mendez

ABSTRACT

The state of Colorado is committed to closing the attainment gap and strengthening its economic fabric. Policy changes in required cut scores for college admission have been designed to facilitate a smoother transition from high school to higher education, particularly for students with developmental writing needs. This study utilized a cluster quasi-experimental design to examine the likelihood of posttest writing proficiency of students enrolled in writing classes with a writing peer mentor versus those who did not. This study also sought to understand the strength of the relationship between underrepresented minority status, self-efficacy, and writing performance. Although inconsistent with other studies similar in scope, the results of this study suggest that peer mentorship was not effective in bolstering writing performance or self-efficacy for students who participated in the writing peer mentor program.
DEDICATION AND
ACKNOWLEDGEMENTS

Dedication

This dissertation is dedicated to my mother, Evette Denise Carroll. At every turn in life, she continues to believe in me and encourage my success. The life goals I have achieved can be attributed to her confidence in me, prayers for me, and life-long guidance. Her encouragement, genuine love for people, and grace in the face of adversity gives me hope and fuels my tenacity to succeed in life.

This research is also dedicated to my love, best friend, and biggest fan, Quincy LaVon Brown. He always encourages my light, especially when it is dim. He joins me in success and encourages me past tough terrain. He is an excellent father to our daughter Kayden Rose Brown and our new son Eames Quincy Brown. His love and selfless actions for our children has provided me with a space to think about educational issues close to my heart, and research ways to contribute as an educator.

Acknowledgements

I wish to acknowledge and thank the several people who made this research and Ph.D. possible—I am thankful for the village that surrounds me. I am blessed to have wonderful mentors: Dr. Sylvia Mendez and Dr. Patty Witkowsky. Thank you for always listening, supporting, providing opportunities, and modeling the way in my personal and professional development as a scholar, educator, and administrator. I also greatly appreciate the patience, commitment, and guidance from the members of the review committee: Dr. Sylvia Mendez, Dr. Robert Mitchell, Dr. Michelle Neely, Dr. Joseph
Taylor, and Dr. Patricia Witkowsky. Your time, energy, expertise, and direction has been invaluable, and I am a more refined as a scholar and educator as a result.

Thank you to the Dean, faculty, and staff of the Department of Leadership, Research, and Foundations in the College of Education for their support during my journey through the Ph.D. program. Thank you to my professors (not serving on the review committee): Dr. Andrea Bingham, Dr. Dick Carpenter, Dr. Phillip Morris, Dr. Margret Scott, and Dr. Dallas Strawn. Your coursework has empowered me to serve as an educational leader, conduct independent research, and approach problems, processes, and educational policy challenges with a great deal of tenacity. A special thank you to my cohort members for your inspiration and encouragement throughout each course and the research process.

I wish to thank my former colleagues—Dr. David Khaliqi, Andrea Diamond, Vicki Taylor, and Anthony Trujillo for allowing me the space to grow and lead within the department. It is their faith and confidence in my abilities that allowed me to perform at my best. It was a pleasure to serve the students and families of southern Colorado alongside you. I would also like to thank Dean Valerie Conley for the opportunity to serve the faculty, staff, and students of the College of Education as the Assistant Dean. I am thankful to be able to collaborate with such a wonderful group of faculty and staff. Finally, I would like to thank the English Department and Writing Center for brainstorming, supporting, and conceptualizing ideas relevant to my research, your support has been invaluable.
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CHAPTER 1
INTRODUCTION

In general, American society benefits from having more citizens who are college educated. When lack of confidence or lack of preparation causes students to suspend their college education, it affects both the students and the economic well-being of the nation (Kallison & Stader, 2012). Access to and success in college have become primary determinates for matriculation into the middle class (Kallison & Stader, 2012). The growing interest around creating and sustaining programs that seek to prepare students for college, begs the question of the true concept of college preparation, particularly as it relates to students who are at greater risk of not matriculating into higher education in productive ways (Venezia & Jaeger, 2013). These at-risk groups include, but are not limited to, underrepresented minority groups (URM) including African Americans, the Latinx community, Native Americans, and students who belong to the foster care community (Venezia & Jaeger, 2013).

Transitioning into higher education with substandard preparation can be a very challenging task. Such a complex transitional space is further complicated for families with economic and social barriers to upward mobility. For more than 50 years, federal and state supported initiatives such as Upward Bound, Funds for Improving Post-Secondary Education (FIPSE), Strengthening Institutions Projects (SIP), and other college access and transition subsidies and programs, have made substantive gains in raising awareness and increasing readiness for post-secondary education. Beyond the importance of raising awareness, educational literature is replete with discussions about the significance of academic confidence and command, particularly around the writing
composition process. While much of the predictive ability to determine student
persistence rates from high school through higher education is informed by high school
grade point average (GPA) and standardized test such as the American College Test
(ACT) or Scholastic Aptitude Test (SAT), much of the student’s decision and ability to
persist is informed by their academic confidence—specifically as it relates to the writing
composition process (Atkinson, 2001; Atkinson & Geiser, 2009).

Both a skill and a requirement, writing is unavoidable in higher education.
Competency levels in both literacy fluency and writing composition confidence are two
primary predictors of college student success (Council of Writing Program
Administrators, National Council of Teachers of English, & National Writing Project,
[CWPA, NCTE, & NWP], 2011). Although the literature is replete with information that
describes, explains, and quantifies the successes and challenges of many college
transition programs throughout the U.S., there is only marginal guidance to assist
educational administrators with systematically implementing co-curricular activities that
support the writing challenges of many underprepared students (CWPA, NCTE, & NWP,
2011).

When a college or a university is committed to dismantling barriers of access to
higher education for students from underrepresented populations, there is great attention
given to the way in which recruitment, admissions, academic practices, and support
services are viewed on the campus (National Association of Student Personnel and
Administrators & American College Personnel Association, 2004). These student affairs
practices come at a high cost to the institution; but without them, the access points
created for traditionally underrepresented student groups, would also come at the expense
of reduced retention rates for the institution—a reality too costly to face (NASPA & ACPA, 2004). With this in mind, it is important to note that although college and university writing retention efforts are in place and designed to ensure student success, are they enough? Nationally, URM groups typically persist at about 58%; the persistence rate is higher for White students at approximately 73% (Bausmith & France, 2015). Although this statistic is by large better than a decade ago, greater efforts are needed to provide resources to support students from URM populations, in particular, those with developmental writing needs (Bausmith & France, 2015; Conley, 2011).

Problem Statement

Within the state of Colorado, educators and educational policy makers are aware of the importance of writing fluency and have accordingly designed policy and programs that encourage college campuses to systematically address the developmental (developmental) writing needs of their underprepared college matriculating students. During the 2016-2017 academic year, 35.3% of high school graduates in the state were placed into at least one developmental, non-credit bearing course—costing the state approximately $12.8 million and students $20.4 million (Colorado Commission on Higher Education, 2017).

Figure 1 displays remediation rates in percentages—disaggregated by students' race/ethnicity—in the state who are college ready versus those who are not, as measured by developmental placement rates (Colorado Department of Higher Education, 2015). Among the students in URM groups, Hawaiian/Pacific Islanders, Black/African American (non-Hispanic), and American/Alaskan Native students have the highest rates of placement into developmental courses, lagging nearly 40 points behind their White
peers (CDHE, 2015). As institutions of higher education in Colorado strive to increase persistence rates to and through degree completion, attention must be paid to the diverse needs of all students (CDHE, 2015).

Figure 1. College readiness by race/ethnicity, 4-year colleges. Reprinted from Figure 4b, Legislative Report on Developmental Education for the High School Class of 2015, by Colorado Department of Higher Education, p. 11.

The need for developmental education provides critical indication of credential success and provides policy makers with valuable information around areas and groups in need of the most attention (CDHE, 2015). For this reason, CDHE is committed to closing the attainment gap, and has established a strategy that includes specific objectives to address the short- and long-range needs of students within the state.

**Purpose Statement**

While many developmental writing program models are widely recognized as being an important component of blurring the lines of unequal access to higher education, their relationship to facilitating the development of writing self-efficacy is less
understood. Following components of Gils (1992) framework for social policy analysis, this study took a critical look at one of the policy’s objectives around supplemental academic support for writing, and further observes implications of the policy in the broader context of developmental English education. In addition, this analysis seeks to understand the policy’s perspective on peer mentorship and the suggestions and financial ramifications that might be associated with implementation. To conduct this analysis and gain a full understanding of the developmental education needs within the state (Gils, 1992), information from primary and secondary data sources, along with data from the actual policy, peer-reviewed articles, and executive summaries were observed.

The purpose of this quantitative study was to better understand the relationship between peer mentorship, writing self-efficacy, and writing achievement. Using a self-efficacy belief rating scale as a measure of self-efficacy, the College Board Accuplacer writing assessment (The WritePlacer), and a hand-scored writing rubric applied to student writing samples as a measure of writing performance, this study was designed to take a thoughtful look at the effects of one in-class writing peer mentor intervention. As suggested by Goodson, Wolf, Gan, Price, and Boulay (2016), this study used a cluster quasi-experimental design approach to assess the impact of the writing intervention. The intervention was designed to bolster writing self-efficacy and writing performance. This study employed a mixed mode (binary and continuous outcome variables) multilevel mediation analysis to test the hypothesis that self-efficacy mediates the effect of peer mentorship on writing performance. The model below illustrates the mediation analysis related to the research questions.
Figure 2. Exploratory Mediation Analysis of Self-Efficacy, Peer Mentorship, and Writing Performance.

The conceptual framework employed uses strategies from the *Framework for Success in Post-Secondary Writing*, which recommends the use of diagnostic tools as an important component of student awareness (CWPA, NCTE, & NWP, 2011). As such, this study used transparent pre-intervention test metrics (data shared with the students) for student baseline data (Goodson, Wolf, Gan, Price, & Boulay, 2016). Literature on interventions within college transition programs predict that students in the treatment group will experience greater levels of self-efficacy and writing performance as a result of the writing intervention. The cluster quasi-experimental design facilitates convenient assignment into treatment and control groups based on class enrollment.

**Research Questions**

The central research questions posed are designed to determine if additional features are needed to encourage persistence to and through developmental English courses, and further sought to gain a better understanding of the effect that peer mentorship has on student levels of self-efficacy and writing performance. The questions are as follows:
Research Question 1a: To what extent is peer mentorship associated with writing performance?

1b. Exploratory: Is the relationship between URM status and writing performance dependent upon treatment?

Research Question 2a: To what extent is peer mentorship associated with student levels of self-efficacy?

2b. Exploratory: Is the relationship between URM status and self-efficacy dependent upon treatment?

Research Question 3a: To what extent does student levels of self-efficacy mediate the relationship between peer mentorship membership and writing performance?

3b. After controlling for treatment status, what is the relationship between student levels of self-efficacy and their writing performance?

3c. What is the relationship between peer mentorship and writing performance, after controlling for self-efficacy?

Research Question 4: Does the strength of the relationship between URM student status and writing performance depend on levels of self-efficacy?

Context of Higher Education in Colorado

Although the political climate in Colorado is highly polarized, and tightly constrained with regard to financial investments into higher education, the institutions of higher education concur on the importance of post-secondary education (CDHE, 2015). Several options currently exist for students to obtain post-secondary credentials; however, it is obvious more needs to be done to address the economic demands within the state. The workforce needs within the state currently require more adults between the
ages of 25-34 to hold high-quality post-secondary credentials (CDHE, 2015). To contextualize this need, URM students within the state have a greater need for developmental education than their counterparts (Figure 1).

Critical in addressing the disparities across economic and geographic conditions within the state, many efforts have been established to provide opportunities for all students to obtain access to education beyond high school. Because college-readiness criteria are for the most part standardized across the nation, the need to bridge the gap in student academic readiness is immense. Although the lines of access to higher education have been simplified through efforts such as early-approach programs in middle school and high school, concurrent enrollment opportunities, and policy changes in required cut scores, these efforts have left colleges and universities scrambling to remediate the needs of many academically underprepared students (CDHE, 2015).

**College-Readiness Standards in Colorado**

Crafted by the Colorado Commission on Higher Education (CCHE, 2016), Table 1 displays CDHEs (2014) minimum college readiness scores for reading and writing, where an ACT writing score of 18 and reading score of 17 or higher is required, a SAT writing score of 440 and reading score of 430 or higher is required, or an Accuplacer Sentence Skills score of 95 and Reading Comprehension score of 80 is required for college admissions. Institutions are empowered with the autonomy to craft admission’s regulations within the guidelines of the scores outlined in the Colorado Revised Statute 23-1-113.3, otherwise known as Title 23, a secondary educational policy that provides directives for admission standards for baccalaureate and graduate institutions of higher education. Although the greatest developmental need exists in mathematics (51%), the
trend is marginally close in writing at 31%. It is important to note that scholars who
focus their efforts on developmental education note the growing body of literature on
item response theory that provides useful information about student preparation (Shultz,
Whitney, & Zickar, 2014). These response patterns suggest that the residual effects of
low performance in reading are often apparent in mathematics achievement scores, as
mathematics questions often require grade-level reading proficiency to untangle
components of the question (Shultz, Whitney, & Zickar, 2014).

Table 1

*Statewide College-Readiness Cut Scores from CDHE, 2014*

<table>
<thead>
<tr>
<th>ACT Sub score</th>
<th>SAT Sub score</th>
<th>Accuplacer Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing</td>
<td>English: 18</td>
<td>Verbal 440</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sentence Skills: 95</td>
</tr>
<tr>
<td>Reading</td>
<td>Reading: 17</td>
<td>Verbal 430</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reading Comprehension: 80</td>
</tr>
</tbody>
</table>

*Note:* Mathematics scores were intentionally omitted.

Moreover, there are a variety of options to fulfill quantitative reasoning
requirements at many 2- and 4-year institutions that do not require college-level
mathematics (college algebra or higher); however, all students are required to complete
the first year writing sequence. Since many students are admitted, and further placed into
college writing courses based on the results of performance indicators such as the ACT,
SAT, or college placement scores, students that begin their college writing sequence in
developmental writing courses, disproportionately leave college at higher rates than their
academically affluent counterparts (Atkinson & Geiser, 2009; CDHE 2015; Tinto 2012).
Title 23 and Supplemental Academic Instruction

**Title 23.** Title 23 allows for the development of standards that will afford students with minimal developmental writing and mathematics needs to have access to developmental course offerings, prior to high school graduation, or options for full enrollment in credit-bearing college courses beyond their secondary education (CCHE, 2016). The goal of Title 23 is to promote clearer communication between and among students, K-12, higher education, and the public at large. Informed by national best practices and by data on student performance in Colorado, the policy is also designed to encourage vertical alignment among educational policies in the state, including CDEs high-school graduation guidelines, statewide admissions standards, and statewide credit-transfer policy (called gT Pathways). The final task of the policy is to provide flexibility to institutions and allow multiple pathways to educational success for students (CCHE, 2016).

To accomplish the above-mentioned goals, CDHE has enacted three specific initiatives designed to decrease the need for academic developmental education. First, the initiative allows for Supplemental Academic Instruction (SAI)—the focus of this study—for students “with limited academic deficiencies” in writing or mathematics. This provision has been made available to four-year institutions and include support mechanisms such as tutoring labs, refresher courses, course material stretched across two semesters, and on-campus full credit courses (rather than requiring students to attend developmental courses off-site at a community college; Garcia, 2015). Second, in line with Tinto’s (2012) best practices for student retention, the state of Colorado has also adopted a statewide effort that increases the availability of concurrent enrollment course
offerings, and third, the state has overhauled its academic standards for developmental education (CDE, 2014). These efforts are designed to support all students, with special concern for the high number of URM students who fail to matriculate, persist, and/or complete their post-secondary degree (CDHE, 2015).

**Supplemental academic instruction.** While Title 23 utilizes several strategies to provide access to higher education, this study remains committed to contextualizing the operationalized nature of SAI and concludes with possible implementation strategies that focus on student persistence. Benchmarks associated with SAI include the following:

- Providing campuses with the freedom to assess students who wish to place into credit-bearing courses, or courses with SAI in English and in mathematics;
- Authorizing campuses to provide co-requisite models if they chose to implement SAI;
- Informing students identified as needing basic skills that developmental courses must be completed no later than the end of the first year; and
- Authorizing institutions with the ability to administer an institutionally-based secondary evaluation of students that are unable to meet specified cut-scores, but exhibit skills of college readiness.

To gain a better sense of the ways in which 4-year universities within the state are applying the tenants of Title 23, I conducted an online search of publicly available campus information on testing requirements and placement into developmental courses. Although at first glance, the placement criteria appear to be on par with the state of Colorado’s requirements outlined for admission, the campuses’ autonomy to admit students that score below the state’s mandated policy provide admissions’ options for
many students with academic deficiencies around writing. The CDHE Placement Guide provided in Appendix A outlines the course-path options now available to students through Title 23 (CCHE, 2017). A further description of three model institutions in Colorado, each applying various tenants of SAI, can be found in Appendix B. Within Appendix B, the institutions are labeled University A, B, and C and a brief description of their first year composition placement criteria and the type of developmental writing program they utilize can be found in Table 2.

Table 2

*Placement Criteria for Three 4-Year Colorado Universities*

<table>
<thead>
<tr>
<th>Name of Institution</th>
<th>First year Composition Placement Criteria</th>
<th>Type of Developmental Writing Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>University A</td>
<td>ACT ENG score &lt; 19</td>
<td>Extended first year, credit-bearing writing course: Counts toward graduation</td>
</tr>
<tr>
<td></td>
<td>SAT verbal score &lt; 440</td>
<td></td>
</tr>
<tr>
<td>University B</td>
<td>Accuplacer Sentence Skills &lt; 95</td>
<td>Extended first year, credit-bearing writing course: Counts toward graduation</td>
</tr>
<tr>
<td></td>
<td>ACT ENG score &lt; 19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAT verbal score &lt; 440</td>
<td></td>
</tr>
<tr>
<td></td>
<td>English Language Learner (ELL)</td>
<td>Writing studio lab, credit-bearing co-requisite: Counts toward graduation</td>
</tr>
<tr>
<td>University C</td>
<td>ACT ENG score &lt; 17</td>
<td>Semester long non-credit bearing developmental course: Does not count toward graduation</td>
</tr>
<tr>
<td></td>
<td>SAT verbal score &lt; 440</td>
<td></td>
</tr>
</tbody>
</table>

**Application of SAI at Sampled Institution (University A)**

In alignment with Title 23, the developmental writing course sequence (stretch sequence) within the first year rhetoric and writing program at the university where this study will be conducted, is designed to support a part of the campus’ mission that focuses
on access to higher education. Developed to maintain the rigor of the traditional first-
semester rhetoric and writing course (ENGL 110), the stretch sequence provides a space
for students lacking college readiness in writing an opportunity to stretch their first
semester course over two semesters (ENGL 100 + ENGL 105 = ENGL 110).
Emphasizing reading, rhetorical theory, and writing processes, students begin to unpack
the parameters around rhetoric and college writing, while at the same time building
significant soft skills that will support their success at the university. During the
academic year 2017-2018, the University admitted nearly 145 students in need of
academic remediation in English. Of the 145 students, 55 percent of the students who
placed into ENGL 100 identified as an URM student, making up the majority of the
students serviced by this course.

The pedagogy of this course is consistent across sections, as course instructors
have monthly professional development collaborations that provide opportunities to
discuss strategies that encourage community building, effective teaching, and student-
centered learning. Although the efforts of this English department are extensive, still, the
needs of students who place into ENGL 100 are significant. Due to the rigor of the
course curriculum, this resource-heavy combination limits the course’s capacity for
innovative models that facilitate the development of self-efficacy—a skill needed to help
underprepared students successfully matriculate and persist through each semester at the
university. This study addresses this need by providing an in-class peer mentor model
with selected sections of ENGL 100, to compare the differences in outcome measures
with those who will attend sections without mentors.
Description of Intervention

In response to the policy’s call for greater degrees of post-secondary matriculation and the gap in the literature around writing achievement, self-efficacy, and peer mentorship, a model for writing peer mentorship was formed. The writing mentor project is designed to serve as a pilot for understanding the effect that writing peer mentorship might have on both academically underprepared students and URM students with developmental writing needs. While SAI provided a space to increase access to higher education, the rates of persistence for students enrolled in these classes suggest that more support is required to ensure that these students have the skills to persist through to completion. Using an in-class model for writing peer mentorship, this intervention design provides an answer to a gap in the literature calling for the use of in-class peer mentors. In-class writing peer mentorship brings the work of the campus writing center directly to the classroom, thus eliminating the barrier of discomfort that many developmental learners mention as reasons to avoid utilizing campus resources (Tinto, 2012). A full description of the intervention’s implementation can be found in Chapter 3, with the operational components found in Appendix C.

Theoretical and Conceptual Frameworks

I used the theoretical and conceptual foundations of this study as a guide for the development of research questions, collection of literature, as well as to inform promising practices in first year English and college transition programs. Further, these frameworks were used as a comparative lens to examine developmental educational policies and practices within the state of Colorado. These frameworks have been employed as a guide throughout the study, as they align with holistically examining the needs of students who
are at risk of delayed or obsolete college persistence—in particular, students with developmental writing needs. Each of the three frameworks approach the college transition process from a distinct research perspective and provide a guide for the discussion of the results of this study’s data.

**Social Learning Theory**

Social Learning Theory helps to explain the interaction between the environment and other internal factors (Bandura, 1986). This learning theory emphasizes the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others (Bandura, 1977). Social learning theory is best explained when observations of human behaviors are disaggregated by cognitive, behavioral, and environmental influences (Bandura, 1977). When the interactions of these disaggregated components are reciprocal and continuous, students are best positioned to form and strengthen the neurological connections needed to retain and sustain related tools to perform a given task.

The components of observational learning include (a) **Attention**, including modeled events and observer characteristics such as sensory capacities, engagement levels, perceptual abilities, and past relevant reinforcement; (b) **Retention**, including symbolic coding, cognitive organization, cognitive rehearsal, and rehearsal of behaviors; (c) **Motor Reproduction**, including physical capabilities, self-observations, and accuracy of feedback; and (d) **Motivation**, including intrinsic and extrinsic motivators, vicarious experiences, and self-reinforcement. Bandura’s (1997) work on these components of observational learning help to explain why some students exercise their control over given situations, and other do not. Within this framework, Bandura (1986) posits that an
individual’s locus of control can help to explain much of the predictive behavior around academic performance. Bandura’s argument is centered on the idea that human behavior is motivated by two key factors, the belief that an individual has about their abilities, and the degree to which an individual has agency and efficacy, particularly within the academic arena (Bandura, 1986).

Academic peer mentors also are uniquely positioned to facilitate stronger connections between the need for self-awareness and help-seeking behaviors for students who are at risk of delayed or suspended college persistence (Bandura, 1997; Tinto, 2012). In addition to this study’s focus on Bandura’s (1995) Theory of Social Learning, Vygotsky’s (1978) focus on a student’s approximation with learning provides a reminder that a student’s approach and capacity for learning is intimately connected to their perception of the culture of learning—in other words, how they have observed learning manifest in their K-12 experiences (Agee & Hodges, 2012). Taking Bandura (1995) and Vygotsky’s (1978) posture into consideration, the writing peer mentors used within this study play a critical role in helping students with developmental writing needs connect to the expectancy level of the collegiate environment.

**Academic Capital Formation**

Newer to the conceptual policy conversation on college access, academic capital formation is a complex set of social processes and behavioral patterns that help to explain the challenges associated with *cross-generational uplift* – a social science term used to explain the process of uplifting a family across economic and social classes (St. John, Hu, & Fisher, 2011). This framework is well suited in the analysis of examining literature on the challenges associated with the college transition process, especially for traditionally
underrepresented populations. In particular, this theory’s attention to concerns about college costs, social networking, trust building, information dissemination, cultural capital, and habitual academic patterns, helps to provide clarity around the explanations and risks associated with educational policies that govern creating clearer lines of access to higher education. These components include active attrition, higher rates of developmental educational needs, greater need for services that provide social and emotional support, and programs that focus on mentoring as a mechanism for building social, academic, and cultural capital (St. John et al., 2011).

Academic capital is first obtained within a generational context (Bourdieu, 1973; St. John et al., 2011). When students lack a legacy of college-going behavior, they typically lack the information, cultural and social capital, and family support needed to commit to educational options such as advanced placement or concurrent enrollment courses (St. John et al., 2011). *Academic affluence* is a term commonly associated with academic capital and is most commonly identified within indicators that point toward a student’s ability to exhibit strong written skills, verbal skills, and quantitative reasoning abilities (Conley, 2011). Although there are many factors that determine if students are able to gain access to advanced courses, parental advocacy is said to be the strongest link to obtaining the academic capital needed for success in post-secondary education (St. John et al., 2011). When students have parents that have little to no experience with post-secondary transitions, the parents lack a general understanding of the level of involvement necessary to properly advocate for the scaffolding needed to support a successful college transition (St. John et al., 2011).
The literature on school reform and academic preparation counters this argument by suggesting that the ongoing school-reform processes expand access in a systematic way (St. John et al., 2011). These efforts have been directed toward the inclusion of college-readiness standards within high-school graduation requirements. These requirements provide a means to further involve school counselors in the conversations around post-secondary preparedness, as a means to supplant the lack of parental involvement present in many lower income households (St. John et al., 2011).

**Framework for Success in Post-Secondary Writing**

As a means of working backwards from the long-term goal to develop college-ready thinkers and writers, the *Framework for Success in Post-Secondary Writing* (referred to as “the Framework” in the remainder of this discussion) is used by many colleges and universities to evaluate the experiences of students during their first year of college. The *Framework* was developed out of a need to address the highly contested and complex task of college level writing (CWPA, NCTE, & NWP, 2011). With tri-educational support from high schools, community colleges, and universities across the nation, the CWPA, the NCTE, and the NWP developed a guiding set of principles that universities generally expect of students (CWPA, NCTE, & NWP, 2011). This Framework’s flexible model proposes principles that are accessible across a broad range of educational settings.

The underpinnings of the framework rests on the idea that habits of mind toward learning are critically important to persistence (CWPA, NCTE, & NWP, 2011). *Habits of Mind* is an insistent approach to challenges that helps students remain tenacious in the face of distractions (Cooper, 2011). In alignment with Tinto’s (2012) suggestions for
preparing URM and first generation students for successful college matriculation and persistence, the *Framework* has identified eight habits of mind that support student learning. These eight habits include curiosity, openness, engagement, creativity, persistence, responsibility, flexibility, and metacognition (CWPA, NCTE, & NWP, 2011). As a means of providing educators with a toolbox to operationalize these habits, the *Framework* outlines strategies in writing, reading, and critical analysis, alluding to the importance of providing students with various avenues to develop the reasoning skills needed to communicate in the 21st century (CWPA, NCTE, & NWP, 2011). Peer mentorship provides a suitable option for helping students develop the critical habits of mind necessary for success to and through higher education.

I have used the three theoretical and conceptual frameworks (Social Learning Theory [self-efficacy and writing], Academic Capital Formation, and The Framework) to guide the literature search, describe and explain some of the gaps in first year college transition programming, and critically reflect on the complex nature of educational stratification. Figure 3 displays the overlapping relationship between the theoretical and conceptual frameworks and how their tenants interact with the research questions investigated in this study.
Significance of the Study

The breadth of literature on college transitions and persistence provide a reminder that writing is a critical tool needed to successfully matriculate and persist in higher education (Bandura, 1997; Honeck, 2013; Komarraju & Nadler, 2013; Pajares, 2006; Tinto, 2012; Zimmerman & Bandura, 1994). Moreover, the role of peer mentorship in helping students become more efficacious during their transitional process cannot be over emphasized. Within the context of this study, peer mentorship serves as a conduit to expose students with developmental writing needs to experiences tied to quality academic
behaviors, vicarious experiences, and seeks to facilitate a sense of belonging in the collegiate environment. While many educational practitioners and scholars have arguably over-emphasized the need for institutions of higher education to pay attention to the number of students they admit with developmental needs, my scholarship seeks to move past a discussion on quantity and more toward the quality of support provided once students are admitted.

From an economic perspective, the educational trajectory of all citizens within a community must lead upward in order to create and sustain economic self-sufficiency; this means, creating a space where students from all ethnic and social categories recognize their ability to succeed in higher education (Checchi, 2006; Tinto, 2012). Herein lies the value in creating an academic environment, layered with faculty that have high standards, yet empathy, and mentors that can relate to the experiences of their peers. Although the role of writing peer mentorship has a historical place on college campuses the focus has shifted from support of those who have developmental writing needs, to a more inclusive space for all college writers (Archer & Richards, 2011). This shift has by and large been positive and has created stronger attitudes toward writing support across the general student population, but by doing so, those marginalized from mainstream college writing courses, have over time become less likely to self-select into the support they need for success in college writing (Archer & Richards, 2011).

Although this quantitative study will primarily be of interest to educators and policy makers interested in improving the practice of college transition writing programs, other community constituents concerned with the ways in which at-risk student groups
are transitioning into adulthood beyond high school, may find the mechanics of this study interesting and useful.

**A Narrowed Focus**

It is important to qualify the work presented in this research for its geographical focus on the U.S. consideration of secondary and higher education. It is equally important to note that the task of investigation in this study is not suggesting K-12 environments are insufficient with regard to developing fluent writers, but rather to draw attention to additional transitory efforts that might help facilitate a smoother transition from high school to higher education, particularly for students who have marginal developmental writing needs. Equally as important to note, the nature of this work specifically focused on college matriculation and not the variety of post-secondary options available for trade and vocational education.

Moreover, this study centered on the basis that first year college matriculating writers are English language proficient and neurotypical (not displaying or characterized by autistic or other neurologically atypical patterns of thought or behavior (Geller & Greenberg, 2009). In other words, there is an overarching assumption that students transitioning to higher education do not have an additional need for academic-related individualized accommodations to support their learning. While there are occasionally first year composition courses and language learning centers equipped to support students who speak English as a second language, the support provided on a college campus differs greatly from that of the K-12 environment (Pajares, 2003). Scholarship on observing the transition into higher education for students with neurologically atypical patterns suggest that there is a growing need for educators who are supportive, involved,
motivated, and skilled in supporting students with symptoms of mental health and/or specialized learning needs (Geller & Greenberg, 2009).

This study drew a comparison between the terms student retention and student persistence. While these terms are often used interchangeably and to some degree are examined in a vacuum, this study subscribes to Hagedorn’s (2005) distinct departure between the two concepts. Hagedorn (2005, p.92) states that “institutions retain students, and students persist.” Although better persistence rates equal greater retention percentages, the onus of where the effort is made shifts from an institutional charge to student-level responsibility. For this reason, this study intentionally drew attention to programs that seek to prepare students to persist, rather than the commonly discussed notion of student retention. Within the context of this study, student persistence is mentioned as a proxy for measuring college student success. This assumption rides on the basis that students that enroll in bachelor’s degree granting institutions are degree seeking and plan to persist through to completion.
CHAPTER 2
LITERATURE REVIEW

Scholarship on college access and transition programs—specifically focused on writing—were most valuable in unpacking the tenants of this study. The existing literature on college transition programs share finding of success with using their university and community connections to facilitate greater lines of access to and awareness of higher education (Tierney, Colyar, & Corwin, 2003). More specifically, many of these programs are used to help students develop awareness of process components needed to navigate the financial aid application, scholarship writing processes, and raise awareness for academic and student success services such as academic advising, the career center, student wellness, library systems, and campus learning centers (Tinto, 2012). While these steps are important components of barrier elimination for many URM and academically underprepared students, their efforts alone are not enough. A need still exists to provide guidance on supporting the writing challenges that exist outside of the capacity most writing centers offer (Greenfield & Rowan, 2011).

With more than three decades of scholarship since Bandura (1977) first introduced the construct of self-efficacy, scholars interested in student motivation view this theory as highly explanatory of student academic achievement (Pajares, 2003, 2006). Within this model, Bandura illuminates a picture of human behavior and motivation in which he explains that they ways in which people view their capabilities is critical to their success (Pajares, 2006). From this sociocognitive perspective, individuals are
viewed as proactive and self-regulating rather than as reactive and controlled by biological or environmental forces (Pajares, 2006).

The literature review explores the various avenues colleges and universities use to create access to higher education. The review is intentionally crafted to extend the dominant conversation on access and retention to take a closer look at efforts designed to increase student’s abilities to recognize the need for self-regulation. Bandura’s (1977) seminal work on behavior and motivation provides an alternative perspective on the popular idea of student retention and is used to examine student departure from the perspective of student persistence around writing.

The critical pedagogical approach used to examine the problem framed within this study approaches the review of literature from a historical and economic perspective. While colleges and universities have several measures in place to address some of the matriculation-related needs of URM students most effected by educational stratification, programs that intentionally address writing, and further support the development of self-efficacy and agency around the writing process are in critical need, under-researched, and underfunded (Pajares, 2003).

**Deficiencies within the Literature**

The high stakes testing mandates facilitated many silos in K-16 educational atmospheres, making it challenging for educators to collaborate and address student needs, specifically around writing (Atkinson, 2001; Atkinson & Geiser, 2009; CWPA, NCTE, & NWP, 2011). Many high school environments are pressured to address the overall testing deficiencies of many URM students, leaving very little time for addressing the pedagogy of teaching students to craft their rhetoric into writing (CWPA, NCTE, &
NWP, 2011). While the literature is appropriately descriptive of college transition programs and national and local writing projects alike, the two very important efforts are described in parallel vacuums, (i.e., there seems to be very little collective impact initiatives taking place amongst and between the two organizational structures).

The literature review construction draws on three distinct fields of research: (a) research that helps to explain the perpetual cycle and need for college access programs; and (b) literature that speaks to the needs and importance of developing college ready students from traditionally URM populations—including best practices for supporting student writing growth; and (c) literature that unpacks the connection between the task of writing and self-efficacy. The literature review also seeks to draw attention to a gap in the literature around the importance of considering academic writing peer mentorship in the context of developmental education.

**Historical Context of Underpreaprdness in Education**

During the mid-1960s, there were many facets of U.S. history that drastically altered the way society approached and thought of higher education (Rury, 2016; Thelin, 2011). During this time, the grassroots efforts to mobilize African American, Hispanic American, Native American, and Asian/Pacific Islander communities helped fuel the Civil Rights Movement, sparking national attention and altering U.S. history in an unforgettable way (Rury, 2016; Thelin, 2011). During this time, the Civil Rights Movement placed immense amounts of pressure on President Kennedy to address the needs of the racial climate in the U.S. (Thelin, 2011). One part of this climate was the desire to include equity in and access to higher education. This historical context points toward the details surrounding access to higher education amongst ethnic minority
groups, during the mid-1900s. To address this access pipeline, TRIO and other equal opportunity programs were designed to provide academic and non-academic support, resources, and mentorship needed—both then and now—to support a population of students who come from families that have been historically excluded and mentally oppressed from equitable preparation for and access to higher education (Venezia & Jaeger, 2013).

The racial climate within the U.S. in the post-WWII era was not favorable toward ethnic minority groups gaining upward mobility (Thelin, 2011). In fact, the government, while attempting to create greater access to higher education during a postwar economy, neglected to address the specifics around ethnic minority groups gaining comparable access (Thelin, 2011). During this time, veterans were returning home from war, equally needing further education to compete in a postwar economy. While all racial groups received the same veterans’ educational benefits, separation still existed amongst many institutions throughout the United States.

Another important fact to note on the racial climate present during this time, were the marches led by Dr. Martin Luther King Jr. in 1963. These historical events put pressure on the Kennedy administration to pay closer attention to and provide further legislation for the Civil Rights Act of 1964, which was signed by President Johnson. The Economic Opportunity Act sought to create a platform for all Americans to become educated and productive citizens with the opportunity to gain meaningful employment (U.S. Department of Education, 2015). For the first time, nationally funded programs were supporting efforts specifically designed to help ethnic minorities gain access to post-secondary education.
Although the U.S. was making great progress toward creating access and support for historically underserved ethnic minority groups, the effects of oppression were still present and pervasive in American culture (Rury, 2016; Thelin, 2011). While equal opportunity programs worked to bridge these gaps, too many students were continuing to fall through the cracks (Venezia & Jaeger, 2013). While the work of these programs supported many families, there were not enough programs nationwide to properly fulfill the demand for student support (Cooper, 2011). Many programs are capped at the number of participants they can service each academic year, and one result of this service capacity challenge is that many students get lost in the lower tier of a socially stratified system, consequently continuing the perpetuation of stagnant mobility into economic self-sufficiency (Cooper, 2011). For this reason, many secondary, post-secondary, and community organizations worked—and are still working—to align efforts to help students understand that education is a mobilizing tool and is a necessary step toward bridging the gap between lack and abundance.

The current progress the U.S. has made toward educating ethnic minority groups is presumed to have marginally improved from that of the mid-1900s. The present higher education discourse has muted the discussions about the desegregation of schools and shifted its focus toward developing and understanding innovative ways to help students persist through to college graduation. While colleges and universities have opened their doors to allow historically URM groups access to higher education, pre-college programs and first year college access initiatives have assumed the task of addressing the current deficiency in transitional skills needed to persist on college campuses. Nonetheless, alarming rates of recent high school graduates are not prepared to succeed in college-
level courses, and the impact of this educational shortcoming is substantial (Kallison & Stader, 2012). College readiness is one of the national educational priorities (Byrd & MacDonald, 2005; Conley, 2011). The U.S. Department of Education (2015) suggested that students who enter college underprepared are less likely to persist through to graduation and incur more college expenses over time than those entering as “college ready” students. In concert with much of the policy reform designed to facilitate smoother transitions into post-secondary education, many federal, state, and philanthropic programs have been designed to help bridge the gap for students looking toward education as a means of social mobility.

Characteristics of Underrepresented Minority Students

Many scholars suggest that race/ethnicity, gender, neighborhood wealth status, and social and cultural affluence all impact a student’s ability to be successful (Kao & Thompson, 2003; Thelin, 2011; U.S. DOE, 2015). This section of the literature review is used to define related characteristics of URM students and further examine their considerations with respect to writing achievement—the topic of focus for this proposal. The subparts include demographic characteristics of URM students (race/ethnicity, gender, and social economic status) and education-related characteristics (urbanicity [neighborhood resources], high school grade point average, ACT/SAT scores, college credit load, and declared college major status) (Tinto, 2012; U.S. DOE, 2015). The description of these student characteristics explain the population from which this study is drawn, as well as express historical narratives that explicate matriculation and persistence behavior of many URM students. For the purposes of this study, URM
student status has been assigned to Asian, Black, Hispanic, Native American, and Multiracial students.

**Intersection of Race/Ethnicity and Education**

Racial/ethnicity-related stratification has long running roots with respect to understanding the educational achievement and attainment gap in America (Kao & Thompson, 2003; Thelin, 2011; U.S. DOE, 2015). To fully uncover the connection between race, inequitable access to education, and academic achievement, one must consider the broader context of the deep southern states—the geographic part of the U.S. that was at the heart of the 1954 Brown v. Board of Education decision to desegregate schools (CAOUS, 1899; Kao & Thompson, 2003). Nearly 120 years ago, it was illegal and punishable by imprisonment to educate the ancestors of today’s African American school population (Kao & Thompson, 2003). Research on cultural capital serves as a reminder that parental levels of education present in a household to a large degree predict educational attainment and achievement (Bankston & Caldas, 1996; Cooper, 2011; DiMaggio, 1982). The lack of education, cultural capital, and therefore economic mobility has generationally crippled the ability of URM families to mobilize toward better educational options (Bankston & Caldas, 1996; Checchi, 2006; Kao, G., & Thompson, J. S. 2003). Although educational segregation is illegal, the social ecology of oppression still appears pervasive in many communities of color and occurs through de facto segregation. The result of this covert educational—and by proxy, power—imbalance is not a zero net. At the expense of educational equity, the status quo remains intact and the economic vigor of the U.S. suffers as a result (Checchi, 2006).
The cultural capital component of this narrative is important to note, as linguistic abilities are paramount in a student’s ability to successfully persist to and through higher education (Honeck, 2013; Zimmerman, 2002). When an URM student lacks a paralleled K-12 educational experience to their White counterparts and is also void of in-home exposure to the standard linguistic narrative dominant in the U.S., their identity development is compromised and further complicated by the lack of minority representation in higher education (Kao & Thompson, 2003). Steele's (2010) conception of stereotype vulnerability regarding how group perceptions are influenced by outsider expectations is equally applicable, irrespective of if the negative stereotype is based on socioeconomic status or on race. These perceptions are important to note as this study examines the self-efficacy beliefs that students have about themselves, particularly around their ability to perform an academic task as inherent as writing (Bankston & Caldas, 1996; Pajares, 2003).

**Gender Considerations with Respect to Writing**

Much of the research used to examine matriculation and persistence in higher education speak considerably about the gender differences that exist, particularly as it relates to URM groups (Pajares, 2003; Reid & Moore, 2008; Strayhorn, 2011). In the text *Writing and Motivation*, Pajares, Valiante, and Cheong (2003) discuss the femininity associated with writing self-efficacy. Their study examined developmental perspectives on students’ writing beliefs and found that females reported higher self-efficacy at each level of schooling than males (Pajares et al., 2003). This is important to note as the national achievement gap—and subsequent college matriculation gap—amongst URM youth widens after controlling for gender (Pajares, 2003; Reid & Moore, 2008;
Strayhorn, 2011). As prison populations are disproportionately congested with URM males, the need to identify and address the gender disparities in post-secondary matriculation seem both critical and imperative. If URM males view command of literacy as a feminine quality, and make poor educational choices as a result, the cycle of perpetuation away from higher education and potentially toward incarceration is plausible. This issue is of great concern and can be potentially addressed through building male confidence around language acquisition (Pajares, 2003).

**Socioeconomic Status and Collegiate Legacy**

The American Psychological Association defines socioeconomic status (SES) as the social position held by an individual on the basis of their education, income, and occupation (Bankston & Caldas, 1996; Hinton, 2015). Scholars who examine SES agree that empirical research reveals inequities in access to resources, educational opportunities, and by proxy, economic and social mobility (Bankston & Caldas, 1996). Within the literature, SES is divided into two subparts—individual SES, explained by examining family social status and peer SES, comprised of family resources that individual students bring to school (Bankston & Caldas, 1996; Checchi, 2006).

**Family social status predicts college-going behavior.** Family social status is defined in the literature as parental occupation and the level of education completed by the student’s immediate care providers—in many cases, the mother and/or father (Bankston & Caldas, 1996; Hinton, 2015). Scholars who study college dropout behavior suggest that family social status can be determined by a student’s PELL eligibility status, which is evaluated through the Free Application for Federal Student Aid (FAFSA) (Tinto’s 2012). This factor is said to influence academic achievement and therefore
should be taken into consideration when examining the achievement scores of first year college writers.

**Peer effect.** Peer effect is highly predictive of student success (Checchi, 2006). Within the literature, the poverty status of a peer population, as indicated by the percentage of students from a district that qualify for the federal free and reduced-price meal program, has been found to negatively correlate to academic achievement, controlling for the individual's own poverty status (Checchi, 2006). Schools are places where students acquire social capital for academic achievement (Bankston & Caldas, 1996; Checchi, 2006). The social capital acquired from peer groups is powerful, as it constitutes an input independent of family social capital (Checchi, 2006). For this reason, linguistic flexibility, confidence, as well as attitudes towards learning are best embodied when students interact with peers that have positive attitudes and approaches toward the process of learning (Bankston & Caldas, 1996; Checchi, 2006).

**Education-Related Demographic Characteristics**

Education-related student academic performance provide highly predictive information about achievement (Rumberger & Palardy, 2005; Tinto, 2012). Educational scholars have consistently cited past performance indicators (HS GPA and ACT/SAT scores), and first year college decisions such as credit load and declared major status as being highly predictive of student success (Rumberger & Palardy, 2005). An examination of these characteristics adds to the body of literature on behavioral patterns associated with students with developmental writing needs that chose to attend 4-year institutions.
High School Grade Point Average

Pre-matriculation performance indicators such as high school GPA provides one of the strongest predictors of college success (Tinto, 2012). For many generations, this outcome measure is also regularly monitored by both parents, students, and building administrators (DiMaggio, 1982). It has been well documented in the literature that grades are positively correlated with achievement capabilities but are more sensitive to student imputes such as homework completion, time management, and the amount of time a student spends on recreational activities, such as social media and television (Alderman, 1999; Alexander & Cooks, 1979; Tinto, 1998, 2012). While grades provide a subjective perspective of the student’s ability—particularly in courses of social science and the humanities—they tend to provide a concrete measure of task completion and follow through across a variety of subjects (Tinto, 2002, 2012). GPA also gives information about a student’s orientation toward schooling and signal toward the odds of success in higher education (CWPA, NCTE, & NWP, 2011; Tinto, 2002, 2012). Tinto’s (2012) work on college student drop out behavior confirms this fact and demonstrates that important conclusions about student persistence can be deduced by examining high school GPA as a predictor of student success in college.

ACT/SAT Scores

The use of standardized achievement scores such as the ACT and SAT has roots back to post-World War II. During this time, standardized test measurements became a primary factor in the admissions’ decision for many American colleges and universities (Atkinson, 2009; Thelin, 2011). While high school GPA served as the primary tool for determining a student’s level of readiness for college, there was significant strength
found in observing an additional metric of assessment along-side high school achievement indicators (i.e. grades; Atkinson & Geiser, 2009).

From the inception, the creators of the ACT and SAT prided themselves in developing a testing environment that encouraged students to critically process through answer choices (Atkinson & Geiser, 2009). Pairing this critical thought agenda to the then-present political tone around creating greater lines of equity and access, the developers of college placement exams were charged with the task of evaluating the underlying role of standardized exams—that is, was the test designed to measure intelligence or designed to understand levels of college readiness and predict academic persistence (Atkinson, 2009). For this reason, college campuses that are committed to blurring the lines of access for students whose cultures are not typically represented in the narratives of standardized achievement exams, have chosen to not examine ACT/SAT scores in a vacuum (CCHE, 2017). Many states have adopted college admission standards that provide additional layers of autonomy for colleges to holistically evaluate perspective candidates for admission (CCHE, 2017).

While high school GPA and standardized test scores such as ACT/SAT scores can generally provide a predictable trajectory analysis of student performance, the confounding nature of their influences on each other are both great and not easily disentangled. For this reason, Bandura (1997) cautions researchers interested in student self-regulation and its influence on performance to be conservative when controlling for previous achievement, moving on to suggest that behavioral explanations cannot be explained by other behaviors. In other words, motivational self-regulatory factors influence previous, current, and future performance—not the other way around. This
point of caution will be noted and taken into consideration when the results of this study are calculated (Bandura, 1997).

**Credit Load and Declared Major Status**

Major declarations and credit course load decisions play an important role in understanding the probability of persistence for students in their first year of college (Tinto, 2012). Harackiewicz, Barron, Tauer, and Elliot (2002) argued that students who enter college without declaring a major have not set an achievement goal for themselves, and thus are less committed to completion. Harackiewicz et al. (2002) moves on to deduce that achievement goals are important measures of a person’s passion and enthusiasm toward degree completion. In addition, their focus on achievement as a goal prevents a student from registering for too many or unnecessary credits. Major declaration can be positively linked to institutional commitment, which helps students focus their time and energy. When students are committed to a college major, they tend to balance their time and effort in ways that support student success (Harackiewicz et al., 2002; Tinto, 2005).

**Defining and Identifying College Readiness**

The growing interest around creating and sustaining programs that seek to provide students with the skills needed for persistence in college, begs the question of the true concept of college readiness. The concept of college readiness cannot be precisely defined; consequently, neither can it be observed or effectively discussed in a vacuum. Many researchers describe college readiness as the level of preparation a student needs in order to enroll and succeed, without remediation, in credit bearing general education courses at a college or university (Conley, 2011; Kallison & Stader, 2012; Muñoz,
Fischetti, & Prather, 2014; Venezia & Jaeger, 2013). This conversation requires further investigation when considering the needs of URM populations. According to Conley (2011), the foundational academic skills needed to persist through to graduation include having a good understanding of college course expectations, mastery over basic content knowledge, navigational skills to encounter various content requirements, and academic discourse flexibility, which provides the ability to translate concepts and discipline specific discourse to other academic arenas.

**Basic Content Knowledge**

Basic content knowledge is most commonly identified within indicators that point toward a student’s ability to exhibit strong writing skills, verbal skills, and quantitative reasoning abilities (Conley, 2011). These indicators are most commonly understood through standardized measures of testing (Conley, 2011). Policy implications in support of college transitions, and programs that facilitate growth in basic content knowledge areas provide notable starts that promote persistence skills and completion strategies for URM and first generation students from under-resourced communities.

**Navigating Various Content Requirements**

Placement into advanced level courses such as advanced placement (AP), International Baccalaureate programs (IB), and concurrent enrollment opportunities (CE) provide students with a pre-college option for exposure to and advancement in the skills required to read, write, and critically think at the collegiate level. Inopportunistly, patterns of racial and ethnic disadvantage in tracking continues to justify stratification within schools. The literature on college matriculation suggest that minority and poor children are disproportionately placed into low ability groups and in non-college bound groupings
while in high school (CCHE, 2015; Kallison & Stader, 2012). The effects of tracked placement subsequently lead to disproportionate differential outcomes in college readiness and matriculation (CCHE, 2015).

**Academic Discourse Flexibility**

While quantitative thinking is an important transitional skill for college success, Alderman’s (2006) study determined that students from URM backgrounds are more likely to choose degree programs in the humanities and social sciences. College majors housed under the humanities and social sciences require a significant degree of writing to persist through to degree completion (Alderman, 2006; CWPA, NCTE, & NWP, 2011). Studying rhetoric and discourse of the humanities and social sciences can pose significant barriers for students with limited reading and writing skills. As with all disciplines, there are preferred language choices that dominate the field and its supporting literature (CWPA, NCTE, & NWP, 2011). In many cases, the literature is historically grounded and linguistically dense, posing a challenge for students to synthesize and reflect on current experiences in the context of these narratives. Students must be willing to be transparent about their growth challenges, self-reflective about their maturity within the discipline, and advocate for the help needed. In many cases, these self-efficacious tendencies are absent in the face of low confidence and placement into developmental English courses (Alderman, 2006).

**Additional College Readiness Needs of URM Students**

College readiness characteristics are best observed in students that have command over basic writing and mathematical concepts, can navigate various content requirements, are able to translate concepts and discipline-specific discourse to other academic arenas
Beyond the academic persistence skills needed, it is also important that first-year transition and access programs focus on the social-cognitive skills that are critical to student success (CWPA, NCTE, & NWP, 2011; Kallison & Stader, 2012).

Social-cognitive skill development is explicitly present in many students that come from homes with high levels of cultural capital. Bourdieu and Passeron (1970) define cultural capital as cultural knowledge and experience, acquired over time, from family, friends, mentors, or teachers that impart status, dispositions, cultural and linguistic expertise, and credentials. In many cases, the same is not true of many URM students that lack a paralleled legacy of college-going behavior, and as a result, matriculate into the university with limited social knowledge and performance expectations that predict college completion. Specifically related to this study, when students lack embodied cultural capital—otherwise stated as linguistic command—to confidently approach the writing process, advocate for clarity, and ask for help when needed, their level of discomfort in their college environment causes them to move toward the edge of an already marginalized mindset at best, and possibly depart from their college experience altogether (Tinto, 2012). Atkinson (2009) cites writing ability as the single best predictor of college performance and persistence.

**College Retention Efforts Focused on Writing Skills**

The retention efforts listed in the following subsections evolved in response to Tinto (1998) identification of the pressing need to address the persistence issues of many first-year students. Tinto’s (2012) work on college drop-out behavior examines the research on student attrition and concludes that the most important components to
consider with respect to student persistence include academic and social identity development, campus integration, and belongingness. Within the literature, college transition programs make use of some of Tinto’s (1998, 2012) ideas and are situated within four categories: (a) early-college access programming, including CE programs (b) summer bridge programs for incoming first year students (c) first year writing programs that have options to support students with developmental writing needs and (d) writing-retention efforts that help students develop persistence skills. The two efforts included in this review are high-school concurrent enrollment (CE) opportunities and first year writing programs—both relative to the task of evaluating the state of Colorado’s developmental education policy around writing.

**English Concurrent-Course Offerings**

Many high schools make greater use of CE options for students who present indicators of future needs for college remediation (Garcia, 2015). This strategy allows students to complete developmental courses while in high school and then move directly into the credit-bearing course once they matriculate to college. This option is typically available to the students who show hope and promise of college enrollment, but in many ways exhibit various levels of college readiness (Garcia, 2015). Within the state of Colorado, high-school CE plays a major role in increasing access to higher education. In fact, more than 38,500 students in Colorado (30%) enrolled in CE programs during the 2015-16 academic year (CCHE, 2016).

In 2009, Colorado lawmakers allowed school districts to partner through cooperative agreements with colleges and universities within the state, allowing 2- and 4-year institutions to gain access to K-12 per-pupil-funding for college courses (Garcia,
This option allowed for early assessment, early access, and has created a level of familiarity with college-level coursework and expectations for many first generation and URM students within the state (Garcia, 2015). These formative, early-assessment options have taken the surprise factor out of student matriculation challenges. For example, when students in their junior year of high school recognize that their placement scores are insufficient for their first year college writing course, many of them become motivated to utilize their senior year of high school for true preparation. In the absence of this awareness, many students waste valuable time during that senior year in courses that do not translate to college-student success (Garcia, 2015). Conversely, students who come from homes with positive and supportive attitudes toward college matriculation are encouraged to take advantage of AP and CE courses during their senior year (St. John et al., 2011). This disparity also helps to explain the lack of racial, ethnic, and income-related diversity on many college campuses.

**Summer Bridge Programs**

Summer bridge programs provide at-risk (low confidence in retention) students—typically URM students, first generation students, or students with deficiencies in mathematics or writing with an opportunity to begin their first semester in college several weeks prior to the start of the semester (Conley, 2011). While many of these programs are designed to guide students toward a smoother transition into college, their main strength lies in helping students build community and familiarize themselves with campus resources (Kallison & Stader, 2012). It is far less often that students experience a rigorous writing experience during a summer bridge program (Kallison & Stader, 2012). Most students spend their time committed to a freshman seminar style course, and work
on academic strategies for success, to include: time management, study skills, learning style inventories, and other social learning considerations (Kallison & Stader, 2012).

**First Year Writing Programs**

Most universities that carry an access thread in their mission offer curriculum for developmental writers with an even start to their first credit-bearing composition course (Pajares, 2003). Although the developmental writing curriculum leaves margin for experimentation with intentional interventions designed to support student levels of self-efficacy and writing growth, the literature is scant with information that helps to quantify the specific needs or justification of the resources needed to create and measure such a design (Pajares, 2003). Within the state of Colorado, Title 23 has created pathways to college through first year writing programs. The new policy’s revision allows for the use of SAI in place of developmental courses.

**Campus Writing Centers**

Campus writing centers are a part of the learning center community nationwide. Designed to provide peer to peer cross curricular support, this retention effort is designed to support all students on campus. Many writing centers work to create a welcoming atmosphere that encourages students to visit the center for writing support, or simply hang out in the space and complete homework. While this effort is couched under the category of retention, many of the skills students learn while working with peer mentors are designed to provide students with persistence skills that will carry beyond the scope of the peer interaction (CWPA, NCTE, & NWP, 2011).

Modern day writing centers are mainly situated around peer support (Al Chibani, 2014; Archer & Richards, 2011; Turner, 2016). Drawing from the literature on student
development theory, peer mentorship can positively affect both the mentor and mentee (Agee & Hodge, 2012). Peer mentors are uniquely positioned to create and strengthen self-efficacy through vicarious experiences (Bandura, 1997). Serving as social models, students in developmental courses become energized and obtain a sense of possibility through shared experiences with their mentor. Pajares (2006) moves on to argue that modeling is most effective when student mentors represent the population with whom they serve. Conversely, the opposite is also true, when students see models that greatly differ from themselves, the mentor loses their ability to positively affect the student’s levels of perceived self-efficacy (Agee & Hodge, 2014; Graham-Short, 2012). The closer the mentor is in similarity to their mentee, the better equipped the relationship is for successful transfer of self-efficacy skills (Agee & Hodge, 2014; Graham-Short, 2012).

Writing mentors can be used to facilitate strategic thinking strategies used to improve writing (Pajares, 2003). These strategies can be converted into specific goals and incrementally implemented to improve writing (Pajares, 2003). When students can work directly with a mentor to receive regular feedback on how well they are using the established strategies, it is possible that writing competence will improve, and overtime, the use of a learned strategy will increase (Agee & Hodge, 2012). In addition, writing centers provide a space for students to practice communicating ideas, voicing their fears, and identifying areas of difficulty, ultimately leading to a stronger understanding of the writing process and a greater command of content organization (Al Chibani, 2014; Turner, 2016). Within the context of writing, both the process improvement and writing achievement are important. The more familiar students are with the process of achieving
incremental writing goals, the more sustained the task of writing becomes (CWPA, NCTE, & NWP, 2011).

As illustrated by the vast literature on metacognition, students that learn to develop a process for thinking about their writing, assess each incremental step against a reliable standard, and modify approaches when needed, will see the greatest neurological connection between what is learned in their English course, and what is understood for future writing tasks (Bandura, 2006). This metacognitive process is referred to as a self-instructional strategy, and for writing includes items such as setting goals, self-recording progress, using mnemonic strategies, learning revision strategies, using self-instructions for strategy induction, and self-evaluating progress (Pajares, 2003).

Peer mentors can also be useful in fostering an environment whereby students learn to develop stronger metacognitive habits, including conducting regular self-reflections and receiving peer feedback (Tierney, Colyar, & Corwin, 2003). The research on college success is replete with discussions on the importance of positive peer groups, as much of the drop-out behavior is encouraged or rejected by role modeling (Swail, 2012; Tierney, Colyar, & Corwin, 2003). Peer groups are also instrumental in developing and supporting aspirations of college continuation for first year students, particularly students that have social and emotional barriers to success in college (Conley, 2011). The Framework for Success in Post-Secondary Writing encourages peer editing, as students who learn to give constructive feedback develop greater levels of maturity around receiving feedback (CWPA, NCTE, & NWP, 2011).
Preceding Research on Writing Self-Efficacy

Although the literature is replete with information on self-regulation, motivation, and self-efficacy as co-linear constructs (Bandura, 1986, 1997; Pictrich & Schunk, 2002), a robust body of evidence that helps to explain how these concepts align with the andragogy (method and practice of adult learning) of academic writing is lacking. The theory of andragogy attempts to model the tenants of pedagogy (the approach to and process of learning) from the perspective of the post-secondary learning experience (Knowles, 1984; Merriam, 2001). The premise of andragogy is that college students are viewed as developing adults who are gradually moving toward self-confidence and self-directedness in their learning (Knowles, 1984). When this growth is disrupted with the need for remediation, motivation toward college completion often becomes disconnected (Adelman 1999, 2006). From this perspective, Bandura’s (1995) definition of social learning theory allows for a paralleled comparison between student developmental needs and “the belief in their capabilities to organize and execute the courses of action required to manage their prospective situation” (p. 2)—that is, the task of college completion. This is particularly true for students who journey toward the social sciences—all of which have components that are writing intensive (CWPA, NCTE, & NWP, 2011).

The relationship between student motivation and the need for developmental education can partially be explained by a student’s motivation to learn (Bandura, 1995). Scholars such as Pierre Bourdieu’s (1973) contribution to the literature on stratification provide explanation to cultural and academic capital that is transmitted across generations. He further positions that habitual patterns and motivations towards learning are first embodied through parental expectations and modeling—components often
missing from families with socioeconomic disadvantages (Bourdieu, 1973). Effective peer mentorship provides a space where efficacy and advocacy can be modeled, and while this option does not replace the void created by the lack of parental experiences, peer mentors are able to guide their mentees through the various stages of development.

**Self-Efficacy Beliefs and Writing**

Bandura (1997) defines self-efficacy belief as the level of judgement a person has about their capabilities to perform a specific task. He moves on to suggest that self-efficacy beliefs are closely tied to experiences in which individuals feel they have control over significant life circumstances or events (Bandura, 1997). Students that possess such beliefs have high functioning levels of self-efficacy and tend to be critically self-aware, self-regulated, and self-evaluative, both during and after difficult tasks (Parajes, 2006). In addition, self-efficacious students tend to heighten and sustain their efforts in the face of difficulty and approach the process of failure as one that is robust (Parajes, 2006). These students approach perplexing circumstances with the confidence in knowing that they can exercise control over the situation. These three factors (self-awareness, self-regulation, and self-evaluation) provide clarity on the skills associated with college persistence behavior (Bandura, 1997; Honeck, 2013; Komarraju & Nadler, 2013; Pajares, 2006; Tinto, 2012; Zimmerman & Bandura, 1994).

Zimmerman (2002) extends Bandura’s argument by suggesting that metacognition is the umbrella construct for self-efficacy and defines metacognition as the awareness of knowledge a person has about their thinking (Zimmerman, 2002). Self-efficacy is not a matter of mental capabilities, but rather a self-directed process by which learners convert their cognitive capabilities into academic skills—this process is referred
to as self-regulation, a critical component of self-efficacy (Zimmerman, 2002).

Komarraju and Nadler’s (2013) work on implicit beliefs addresses the notion that inner beliefs and goals help to facilitate effort regulation. Their study moves on to suggest that students who are highly motivated and confident in their ability to succeed are best positioned to approach the process of developing metacognitive strategies such as rehearsal, organization, critical thinking, and self-regulation (Komarraju & Nadler, 2013). These metacognitive strategies allow students to make effective use of their time and resources, consequently guiding them to make critical choices with respect to time and to study environment management, effort regulation, peer learning, and help seeking behaviors (Komarraju & Nadler, 2013).

Figure 4 displays the metacognitive cycle observed in the literature concerning student persistence. A larger version of this model can be found in Appendix E. Within this model, writing peer mentors are used to positively interrupt the cycle during the execution phase. Mentors can be used to monitor task execution, self-advocacy strategies, resilience while recovering, and persistence in problem solving (Agee & Hodges, 2012). The cycle reveals that simply possessing inner beliefs of one’s ability to perform a task without peer mentors at both the planning and execution stage, could potentially leave academically underprepared students at risk of departure from their plan for success.
Figure 4. Cycle of metacognitive support.

In the context of academic achievement, self-regulation refers to self-generated thoughts and behaviors that are oriented toward attaining goals. The subscales of metacognition, and by proxy self-efficacy that were used in this study’s empirical examination of metacognition include developing a better understanding of how students approach (a) setting specific goals for themselves; (b) restructuring physical and social context to make it compatible to the goals they have set for themselves—including self-instruction, attention-focusing, and task management strategies; (c) adapting strategies in the face of challenges; (d) monitoring performance for signs of progress; (e) managing time efficiently; (f) evaluating self-observed performances against some standard, such as one’s prior performance, another person’s performance, or an absolute standard of
performance; (g) attributing causation to results; and finally, (h) adapting future methods to elicit the use of potential techniques that can be used to enhance outcomes (Bandura, 1997; Honeck, 2013; Komarraju & Nadler, 2013; Pajares, 2006; Zimmerman, 2002).

Stajkovic and Luthans (1998) and Bandura’s (2006) meta-analytic research on the relationship between self-efficacy beliefs and achievement outcomes mainly focus on mathematics and science outcomes and found that self-efficacy has proven to be a more consistent predictor of behavioral outcomes than have other self-beliefs. Findings from these studies provide evidence that efficacy beliefs influence mathematics and science-related career choices, but research on writing has received modest attention from both researchers in the field of composition and behavioral scientist interested in metacognitive processing (Williams & Takaku, 2011). This gap in the literature poses problems when considering the magnitude of implications that composition has on the college transition and persistence experience.

While the literature provides scarce guidance in understanding the relationship between writing self-efficacy beliefs and writing outcomes, effect size calculations for the trivial number of studies conducted on writing self-efficacy observed regression models that ranged from .32 to .42 (Pajares, 2003). These studies also reported that these results were also correlated with other expectancy variables such as grade goals, and anxiety around the writing process (Pajares, 2003). More recent research by Williams and Takaku (2011), Honeck (2013), and Schmidt and Alexander (2012) support these results and reveal that writing self-efficacy makes an independent contribution to the prediction of writing outcomes and supports the mediational hypothesis driven by social learning theory. When students’ confidence for self-regulation is high, their ability to
regulate their learning strategies is increased, thus promoting higher degrees of writing competence (Schunk & Zimmerman, 1994; Zimmerman, Bandura, & Martinez-Pons, 1990, 1992; Zimmerman & Kitsantas, 2014). Consequently, when students develop beliefs about their academic capabilities, they are able to demonstrate the use of learned and refined strategies for task completion (Pajares, 2006). Accordingly, students’ perceived self-regulatory skills predict the certainty they will experience when faced with academic tasks, leading to greater strategy use, higher intrinsic motivation, more adaptive attributions, and as a result, greater degrees of academic achievement (Pajares, 2006; Zimmerman & Kitsantas, 2014).
CHAPTER 3

METHOD

Overview

The purpose of this study is to better understand the relationship between peer mentorship, writing self-efficacy, and writing performance. More specifically, this study was designed to estimate the effects of peer mentorship on student levels of writing self-efficacy and writing achievement. While prior work on peer mentorship and writing performance suggest that peer mentors transmit several cognitive and social skills needed for successful academic performance, the current literature on student writing performance does not examine the possible mediational effects that self-efficacy may have on writing achievement. This study takes a comprehensive look at ways in which academic peer mentorship influences the development of self-efficacy for students who have developmental writing needs—giving particular attention to students who belong to URM populations.

Using a self-efficacy belief rating scale as a measure of self-efficacy, the College Board Accuplacer writing assessment (The WritePlacer), and a hand-scored writing rubric applied to student writing samples as a measure of writing performance, a cluster quasi-experimental design (QED) was used and impact estimates were generated from multilevel models for both continuous and binary outcomes. To account for the selection bias associated with the QED technique, baseline measures of the outcomes and additional demographic and predictive characteristics were included in the regression analysis (Ary, Jacobs, & Sorensen, 2006).
Setting and Participants

The sample is comprised of first year developmental writing students at a public 4-year institution in Colorado. In alignment with the state’s policy on developmental education, the University examined in this study has adopted a model for writing remediation that affords students with developmental writing needs the opportunity to enroll in a credit-bearing, two-semester, English course. This approach is commonly referred to as a mainstreaming delivery model and provides a space whereby students can stretch their first year English course over two semesters. Adams et al. (2009) highly recommends the mainstreaming approach over the widely applied non-credit bearing developmental experience typically offered to students with developmental academic needs.

The sample was comprised of 179 of the total 342 students enrolled in English 100—the first part of the stretch English course sequence within the First Year Rhetoric and Writing Program at the University. Placement into this course is determined by college readiness exam scores that are slightly above the states recommended benchmarks for college readiness (19 on ACT and 460 on SAT). There were 53 participants who did not complete all components of the study or withdrew consent. These 53 students were dropped from the analyzed data set and were not included in the pretest or posttest analysis. The remaining 126 students were used to analyze this study’s data.

Despite the efforts of the University to provide a point of access for students with developmental writing needs, the persistence rate from Fall 2016 to Spring 2017 held constant from previous years at approximately 58 percent. To further disaggregate this
population by race/ethnicity, 55 percent of the students within the Fall 2016 cohort identified as an URM student. These numbers are consistent with persistence rates of students in developmental courses across the state of Colorado (CCHE, 2017).

Descriptive statistics for the students included in this study are presented in Table 3. The race/ethnicity variable was dummy-coded using White students (37%) as the reference group. Overwhelmingly, Hispanic students comprise the largest comparison group at nearly 31%. The remaining sample is comprised of Asian students at 3.9%, Black students at 14.2%, Native American students at .8%, and students who identified as multiracial at approximately 12.7%. The variable URM was also used to categorize students based on their representation at the University.

Table 3

Demographics by Treatment Group

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Treatment (n = 88)</th>
<th>Control (n = 38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Asian</td>
<td>4.5</td>
<td>2.6</td>
</tr>
<tr>
<td>% Black</td>
<td>12.5</td>
<td>17.9</td>
</tr>
<tr>
<td>% Hispanic</td>
<td>29.5</td>
<td>35.9</td>
</tr>
<tr>
<td>% Native American</td>
<td>1.1</td>
<td>0.0</td>
</tr>
<tr>
<td>% White</td>
<td>39.8</td>
<td>30.8</td>
</tr>
<tr>
<td>% Multi Race</td>
<td>12.5</td>
<td>12.8</td>
</tr>
<tr>
<td>% URM</td>
<td>61.4</td>
<td>68.4</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Female</td>
<td>47.7</td>
<td>51.3</td>
</tr>
<tr>
<td>% Male</td>
<td>52.3</td>
<td>48.7</td>
</tr>
<tr>
<td>Situational Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Pell eligible</td>
<td>50.0</td>
<td>43.6</td>
</tr>
<tr>
<td>% First Generation</td>
<td>38.6</td>
<td>35.9</td>
</tr>
<tr>
<td>High School GPA</td>
<td>2.99</td>
<td>3.01</td>
</tr>
<tr>
<td>ACT English Score</td>
<td>14.83</td>
<td>15</td>
</tr>
<tr>
<td>Credit Load</td>
<td>13.83</td>
<td>13.74</td>
</tr>
<tr>
<td>% Declared major</td>
<td>31.8</td>
<td>33.3</td>
</tr>
</tbody>
</table>

*Note: These numbers represent the analyzed sample
Of the students in the sample, 64% identified as a member of a non-White group. Within this sample, females encompassed approximately 49% of the students and males at 51%. Pell eligible students made up nearly 46% of the sample. Pell eligibility was used as a proxy to categorize SES. Approximately 37.25% of the sample self-identified through the Free Application for Student Aid (FAFSA) as the first in their immediate family (mother and father) to work toward completion of a bachelor’s degree. The mean GPA of the sample was approximately 3.0—the cut score for predicting persistence (Tinto, 2012). The ACT was the most popular entrance examination with greater than 95% of students submitting a reading/writing score of 15 or below—three points below the recommended state cut score (see Table 1), and four points below the standard entrance expectation of the students at this institution.

**Description of Intervention**

In collaboration with the First Year Rhetoric and Writing Program and the Writing Center at the University, a model for peer mentorship was designed. To begin, four English Instructors (Writing Project Faculty) and the Director of the Writing Center participated in the design of the intervention and agreed to allow access to their classrooms for recruiting and subsequent writing intervention activities. This access was captured in the form of a written statement and submitted as a part of the university’s Institutional Review Board (IRB) application process.

The writing peer mentor program served as a modification to their first year stretch English course and included the utilization of peer writing mentorship as an impetus for helping students develop self-efficacy skills such as self-regulatory skills, self-awareness, self-advocacy, and the tenacity to be resourceful in the face of challenges.
In addition, the writing mentors were strategically positioned to reinforce the importance of building and sustaining a community within the classroom. Furthermore, mentors provided support in reinforcing the importance of the *process* of writing, unpacking the assignment sheet to ensure clarity on all requirements, preparedness for peer review sessions, willingness to give and receive honest feedback during peer review sessions, and the importance of planning and proofreading. A full description of the writing peer mentor program can be found in Appendix D.

The peer mentors were selected from a pool of students who had successfully completed the developmental English stretch course sequence. Writing peer mentors participated in a two-day training led by English faculty, the Writing Center Director, and the Director of the Languages and Social Sciences Center at the University. Peer mentors were required to attend all course meetings to operationalize the goals of the project listed above, gain a sense of the pace and rigor of the curriculum, and monitor student questions. To follow-up on student questions, mentors met with their mentees individually two or three times throughout the semester. Mentors met with their English faculty mentor throughout the semester to adjust plans, discuss student concerns, and plan for individual meetings.

**Research Questions**

The research questions used to guide this study’s investigation are as follows:

*Research Question 1a:* To what extent is peer mentorship associated with writing performance?

*1b. Exploratory:* Is the relationship between treatment status and writing performance dependent upon URM status?
Research Question 2a: To what extent is peer mentorship associated with student levels of self-efficacy?

2b. Exploratory: Is the relationship between treatment status and self-efficacy dependent upon URM status?

Research Question 3a: To what extent does student levels of self-efficacy mediate the relationship between peer mentorship membership and writing performance?

3b. After controlling for treatment status, what is the relationship between student levels of self-efficacy and their writing performance?

3c. What is the relationship between peer mentorship and writing performance, after controlling for self-efficacy?

Research Question 4: Does the strength of the relationship between URM student status and writing performance depend on levels of self-efficacy?

Overview of the Research Design

This study used a pretest/posttest control group design (Shadish, Cook, & Campbell, 2002) where the means of posttreatment outcome measures were compared across the treatment and control groups after being controlled for pretreatment differences in outcomes. The unit of assignment to groups was the section of ENGL 100 (or “cluster” at the instructor level) and was predicated upon the availability of the peer mentors. Neither matching nor blocking was used prior to group assignment. The research design is divided into three sections. Part I (Research Question 1a: To what extent is peer mentorship associated with writing performance? and Research Question 2a: To what extent is peer mentorship associated with student levels of self-efficacy?) seek to estimate the unmediated main effect of peer mentorship on students’ writing
performance and self-efficacy. Part II (Research Question 3a: To what extent does student levels of self-efficacy mediate the relationship between peer mentorship membership and writing performance?) seeks to explore self-efficacy as a mediator of the relationship between peer mentorship and writing performance. Part III (Research Question 4: Does the strength of the relationship between URM student status and writing performance depend on levels of self-efficacy?; Research Question 1b. Is the relationship between treatment status and writing performance dependent upon URM status?; and Research Question 2b: Is the relationship between treatment status and self-efficacy dependent upon URM status?) seek to explore URM status as a moderator of the observed relationships between peer mentorship, self-efficacy, and writing performance.

**Research Design Part I: Estimating the Main Effect of Peer Mentorship**

To better understand the relationship between writing peer mentorship and writing achievement, this cluster QED examines the likelihood of proficiency in student writing performance based on whether students are enrolled in a class where peer mentorship is used. Figure 5 displays the unmediated main effect of peer mentorship (IV) on student writing performance (DV).

![Diagram](image)

*Figure 5. Relationship between Peer Mentorship and Writing Achievement (c path).*

**Determining Treatment Status**

ENGL 100 is a course that emphasizes reading, rhetorical theory, and writing processes. Within this course, students begin to unpack the parameters around rhetoric and college writing, while at the same time building significant soft skills that will
support their success at the University. The pedagogy of this course encourages community building and is supported by small class sizes, a key component of effective teaching and learning. To further support the persistence challenges of students in this course, writing peer mentors were used to bolster self-efficacy and writing performance. A full description of the writing intervention can be found in Appendix C.

Treatment status was determined by section number. There were eight treatment sections and four control sections. Students were unaware of the option to participate in the study prior to registering for class. The University offers sections of ENGL 100 during all three scheduling time blocks (morning, afternoon, and evening). Tinto’s (2012) work on student departure suggest that students who work full-time are less likely to persist. Enrollment in evening classes is positively correlated with atypical academic schedules. To account for selection bias, treatment status was assigned to all three scheduling blocks. Mentor placement into sections of ENGL 100 was primarily controlled by the mentor’s academic school schedule. Since academic mentors are current students at the University, hiring for the position was accomplished through student employment. Federal guidelines for employing students on a college campus strictly prohibit college supervisors from requesting specific hours for students to work. As such, writing mentors could select from the 12 sections of ENGL 100 that agreed to participate in the study.

The Control Condition

The 12 sections of ENGL 100 were taught by the Writing Project Faculty. Three of the four faculty members had at least one treatment and one control section of the course. The fourth faculty member had all treatment sections. Fidelity of
implementation can primarily be explained by observing the collaborative nature of the stretch faculty team. The writing project faculty members meet once per month for grade norming and bilateral conversations about course curriculum and execution. This level of collaboration is necessary as the second half of the stretch English sequence (ENGL 105) is delivered by all members of the stretch faculty, thus creating a need for a seamless curricular transition from the Fall (ENGL 100) to the Spring (ENGL 105).

**Research Design Part II: Exploring Self-Efficacy as a Mediator**

Self-efficacy beliefs play a critical role in writing achievement scores (Pajares, 2003). To gain more insight into Research Question 3a: To what extent does student levels of self-efficacy mediate the relationship between peer mentorship membership and writing performance, both writing performance scores and writing self-efficacy were studied within an in-class writing peer mentor model. My hypothesis is that the nature of in-class peer mentorship is critical to student levels of self-efficacy and further increases the likelihood of proficiency on measures of writing performance. This hypothesis is supported by recent studies by Al Chibani (2014) and Turner (2016), which confirm the effectiveness of peer mentorship in supporting student’s command of the writing process.

A full exploratory mediation analysis allowed for careful consideration of the possible association that self-efficacy beliefs have with student writing performance. As a result, this study sought to collect data about student levels of self-efficacy, and test whether the treatment (peer mentorship) has an indirect effect on the likelihood of proficiency in writing performance via self-efficacy as a mediating variable (see Figure 6).
Figure 6. Exploratory Mediation Analysis of Self-Efficacy, Peer Mentorship, and Writing Performance.

In Figure 6, path $a$ represents the effect of treatment on student levels of self-efficacy (DV); path $b$ represents the effect of self-efficacy (the mediator) on the likelihood of student writing performance outcomes, controlling for treatment; and path $c'$ represents the effect of the treatment on the likelihood of student writing performance outcomes, controlling for self-efficacy. That is, $c'$ is the direct (unmediated) effect of treatment.

Outcome Measures

Writing Performance

Writing achievement was measured using a hand-scored rubric (Writing Rubric) designed by the Writing Project Faculty. The Accuplacer’s Writeplacer has been used by many colleges and universities as a metric to measure college readiness (Kolbrin, Patterson, Shaw, Mattern, & Barbuti, 2008). Within this study, the Writeplacer was used to generate college-level normed essay prompts. Students were expected to plan ideas, write 300-600 words, and proofread this essay within the allotted timeframe (Kolbrin et
al., 2008). Students completing the assessment were given an essay topic similar to the one below:

_Is an education a requirement for a successful career? Explain the topic and either agree or disagree with the statement, offering support for your position_ (Kolbrin et al., 2008).

Mattern and Packman (2009) suggest computer-assisted writing assessments coupled with a human score from hand-scored rubrics provide the most accurate depiction of a student’s ability. Following this recommendation, all essays were hand-scored by the Writing Project Faculty. The rubric was designed to measure student’s writing abilities across six different domains, including thesis development, logical organization, supporting ideas, audience awareness, grammatical correctness, and a holistic score. Each member of the Writing Project Faculty graded the pretest essays from their sections of ENGL 100. Posttest essays were rotated to avoid instructor bias. Standard interrater reliability measures were employed to ensure consistency in grading practices (Murnane & Willett, 2011). Prior to the faculty receiving the first round of student essays, a grade norming session was conducted using a three-round grading cycle to ensure that essays were scored not more than one point apart (Murnane & Willett, 2011). Posttest writing scores were used in the regression analysis as the primary dependent variable of interest. Scores were dichotomously categorized, with a holistic score of four or better indicating writing proficient, and a three or below indicating non-proficient writing performance (Mattern and Packman, 2009)
Self-efficacy

Bandura (2006) provides guidance on the construction of sound self-efficacy scales that are grounded in good conceptual analysis of relevant domains. To accurately capture the concept of self-efficacy, item construction must include considerations for self-beliefs, self-regulation, and self-evaluation—the three subscales used to measure self-efficacy within this study (Bandura, 2006). These three domains were operationalized through item construction that portrayed different levels of task demands along each construct. For each construct, students were asked 10-20 questions designed to measure the strength of their belief in their ability to execute an essential activity (Bandura, 2006). Students were asked to record the strength of their efficacy beliefs on a 100-point scale, ranging in 10-unit intervals from 0 (“Cannot do at all”); through intermediate degrees of assurance, 50 (“Moderately can do”); to complete assurance, 100 (“Completely certain I can do”). The 100-point scale was chosen at the suggestion of Bandura’s (2006) guidelines for essay construction. A simpler response format retains the same scale structure and descriptors but uses single unit intervals ranging from 0 to 10 (Bandura, 2006). These three subscales were used collectively to measure student levels of self-efficacy and were calculated in the regression equation on a continuous scale of 0 to 400.

The instructions of the rating scale are also important in capturing accurate self-efficacy beliefs. According to Bandura (2006), instructions should be designed to posture the mindset that participants should have when rating themselves in the present. In other words, responses should reflect their current operative capabilities and not their potential
capabilities of their expected future. The instructions used on the self-efficacy scale for this study are included below:

*On a scale from 0 (never) to 100 (always), please rate how sure you are that you can perform each of the writing skills described below by writing the appropriate number. Of course, there are no right or wrong answers to such questions, so do not spend too much time on any one statement.*

The rate scales for writing were constructed from Zimmerman’s (2002) adaptation of Bandura’s work. Zimmerman’s (2002) conception of self-regulation provides operational tenants for the consideration of writing and self-efficacy beliefs. Honeck’s (2013) study on perceived writing self-efficacy beliefs of students in community college provided the structure and the framework for the rate scales used in this study. A full list of rate scale items can be found in Appendix F.

**Measures of validity and reliability**

The Cronbach’s alpha was used to report the internal consistency (reliability) of the items included on the self-efficacy scales for writing. In addition, this statistical test was performed to check for consistency and homogeneity of the items included within the scale (Mertler & Vannatta, 2010). Reliability scores were consistent with the range which spans from .85 for elementary school samples to .95 for college samples (Pajares & Johnson, 1994; Shell et al., 1989, 1995).

**Description of Independent Variables**

Drawing from previous studies on writing remediation efforts, attention to race/ethnicity, gender, SES, and persistence qualities were considered to accurately predict writing achievement for students in developmental courses (Caldas & Bankston,
The literature is replete with discussions of the importance of considering racial and ethnic composition when examining educational interventions. The socially stratified educational system provides predictive patterns of educational attainment and achievement for many marginalized groups (Kao & Thompson, 2003; Thelin, 2011). Further, controlling for gender differences helps to explain persistence observations amongst many first year college writers (Pajares, 2003; Reid & Moore, 2008; Strayhorn, 2011). SES is primarily a covariate of interest due to the explanatory capabilities around family resources. Writing experts theorize that students from under-resourced homes have both lower levels of education within the home and sparse levels of educational and academic capital amongst their peer groups (Caldas & Bankston, 1997). As such, I used Pell eligibility as a proxy for SES, a mode typically employed in post-secondary research on developmental education (Alexander, 2002; Deming & Dynarski, 2009; Dynarski, 2009).

To further refine the effects of SES on student performance, urbanicity was included as a variable of interest (Rumberger & Palardy, 2005). As noted by Bankston and Caldas (1997), neighborhood characteristics have a significant impact on student’s academic achievement. The literature is replete with discussions that frame the issue of school population composition as a question of disadvantages of homogeneity versus the advantages of diversity (Rumberger & Palardy, 2005). The over simplistic nature of discussing the implications of benefits versus disadvantages of school types creates somewhat of a circular argument that leaves scholars of this field unsettled (Bankston & Caldas, 1997).
High school GPA and ACT/SAT scores have also been widely recognized as highly correlated with predicting college outcomes (Adelman 1999, 2006). While these characteristics exhibit high degrees of multicollinearity (Adelman 1999, 2006) they were observed separately in the regression analysis, as ACT/SAT scores determine course placement, and GPA scores are merely used as a factor that influences college admission (Adelman 1999, 2006). With ACT as the most popular entrance exam for the state of Colorado in 2017, all SAT scores were converted to ACT scores based on the jointly published ACT/SAT guidelines established by ACT and the College Board (ACT-SAT, 2013).

Table 4

Variables Used in Examining Writing Peer Mentorship and Student Achievement

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Independent Variable</td>
<td></td>
</tr>
<tr>
<td>Treatment status</td>
<td>Nominal (0 = Control, 1 = Treatment)</td>
</tr>
<tr>
<td>Covariates</td>
<td></td>
</tr>
<tr>
<td>Pretest writing prof.</td>
<td>Nominal (0 = Not Proficient, 1 = Proficient)</td>
</tr>
<tr>
<td>Pretest self-efficacy</td>
<td>Continuous (Min = 0, Max = 400)</td>
</tr>
<tr>
<td>Gender</td>
<td>Nominal (0 = Female, 1 = Male)</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Nominal (1 = Asian, 2 = Black, 3 = Hispanic, 4 = Native American, 5 = White, 6 = Multi Race)</td>
</tr>
<tr>
<td>Pell status</td>
<td>Nominal (0 = No, 1 = Yes)</td>
</tr>
<tr>
<td>High school GPA</td>
<td>Continuous (Min = 1, Max = 4)</td>
</tr>
<tr>
<td>ACT English score</td>
<td>Continuous (Min = 12, Max = 36)</td>
</tr>
<tr>
<td>First generation</td>
<td>Nominal (0 = No, 1 = Yes)</td>
</tr>
<tr>
<td>Dependent Variables</td>
<td></td>
</tr>
<tr>
<td>Writing posttest prof.</td>
<td>Nominal (0 = Not Proficient, 1 = Proficient)</td>
</tr>
<tr>
<td>Self-efficacy posttest</td>
<td>Continuous (Min = 0, Max = 400)</td>
</tr>
</tbody>
</table>
First generation student status was self-reported and used as a covariate in this study. Family going college behavior is said to be highly predictive of the beliefs that students hold about their ability to succeed in college (Checchi, 2006). Students who are the first in their family to attend college often have liquidity restraints and competing family priorities that prevent them from fully focusing on their educational experiences (Checchi, 2006). The full list of variables used in the analysis is included in Table 4.

**Statistical Assumptions**

As part of the initial data inspection, standard tests for normality, linearity, homoscedasticity, and outliers were performed as a part of the initial data inspection process. Data was screened to ensure that values for skewness and kurtosis were within an acceptable range.

**Data Collection Procedures**

After receiving IRB approval (Appendix F), all first year English 100 students enrolled in one of the 12 participating sections were invited to participate in the study. After visiting each of the 12 classrooms and obtaining student consent, students completed the Writeplacer and self-efficacy rate scale. Both metrics were collected twice during the Fall 2017 semester—once in August and once in December. Students who opted out of the intervention received the treatment; however, their data was excluded from the analysis of this study. The pre/post scores were added to the master data spreadsheet, which included columns for the following demographic and past performance academic indicators: last name, first name, race/ethnicity, gender, course section number, pre/post test data, HS GPA, high school graduated, English ACT score, current credit load, Pell status, declared major status, and enrollment into the follow-on
Spring English course (ENG 105). Data collection of all student demographic and FERPA protected data was coordinated and deidentified by the University’s Office of Institutional Research (OIR). The OIR was given the master data spreadsheet, which is organized with variables running along the “X” axis and cases situated vertically along the “Y” axis. Once all FERPA protected data was added to the spreadsheet, OIR de-identified the cases by assigning a linking ID number that was stored on a password protected computer; the linking information is only available to the OIR.

**Statistical Method**

This study employed a mixed mode (binary and continuous outcome variables) multilevel mediation analysis to test the hypothesis that self-efficacy mediates the effect of peer mentorship on writing performance. The model below illustrates the mediation analysis related to the research questions.

*Figure 6. Exploratory Mediation Analysis of Self-Efficacy, Peer Mentorship, and Writing Performance.*
Testing statistical mediation in data with binary and continuous variables must be handled with special consideration (Jasti, Dudley, & Goldwater, 2008). Mediation is typically handled by regressing $X$ (IV) on $Y$ (DV) and controlling for $M$ (mediator) (Barron & Kenny, 1986). When the mediator and outcome are measured on a continuous scale, the analysis outlined above can be accomplished with simple OLS or multilevel modeling. The above-mentioned process has been well-articulated in the literature on mediation analysis (Preacher & Leonardielli, 2001). When the outcome variable in a mediation analysis is binary, the analysis becomes more complex, as the scaling of coefficients derived from logistic models are not consistent with HLM, and therefore cannot be combined with coefficients produced by linear regression (Mackinnon & Dwyer, 1993, as cited by Jasti, Dudley, & Goldwater, 2008). To account for this statistical challenge, Mackinnon and Dwyer (1993) suggest a method of standardization that brings logistic coefficient estimates into the same scale as multilevel coefficients (Jasti, Dudley, & Goldwater, 2008). This method is accomplished by dividing the coefficients by the standard error of the model from which they were derived. By way of example, the coefficient from the $c$ path must be standardized using the standard error of the $c$ path (Jasti, Dudley, & Goldwater, 2008). Standardized coefficients were computed by dividing each coefficient by the standard error of its model:

$$Std\ (c) = \frac{c}{\sigma(y)}$$

Once the coefficients were standardized, they were used to compute estimates of mediation typically used with the Sobel test (Jasti, Dudley, & Goldwater, 2008).

$$Sobel\ test = \frac{c - c'}{\sigma_{c-c'} ab}$$
where:

\[ \sigma_{ab} = \sqrt{\sigma^2_{ab} + \sigma^2_{ba}} \]

Hierarchical levels of clustered data are commonly found in educational research (Raudenbush, Bryk, Cheong, Congdon, & Toit, 2011). Classroom clusters commonly share similar experiences, which may differ from that of their peers within other sections. To capture the treatment effect of the writing intervention on student levels of self-efficacy and student writing achievement, a hierarchical linear model (HLM) was employed to answer Research Questions 1a, 1b, 2a, 2b and 3 (Crawford, Carpenter, Wilson, Schmeister, & McDonald, 2012). Question 4 was answered using a standard logistic regression method of analysis. The research questions and their respective analysis details are indicated below. Grand mean centering was used for all models to ensure that the Y- Intercept is interpreted as the predicted log of the odds of success of an individual whose value for all independent variables is equal to the grand mean (Raudenbush, Bryk, Cheong, Congdon, & Toit, 2011).

HLM 7.0 software was used for all analysis involving multilevel data. HLM is a sophisticated form of regression that is used to examine the variance in dependent (outcome) variables when the predictors are potentially present at various hierarchical levels (Raudenbush et al., 2011). HLM allows the researcher to observe variance in the model potentially explained by hierarchically structured data (Raudenbush et al., 2011). Negligent attention to this problem could lead to biased estimates of treatment effect and potentially false conclusions about the intervention’s effectiveness (Ary et al., 2006). It is important to note that there are only 12 clusters (Level 2), resulting in a very small \( n \).
It is possible that the degrees of freedom are too small to accurately account for the variance explained by the clusters.

As an additional way to interpret the treatment effect, Cohen’s $d$ calculations were computed for each treatment effect related to the research questions. Research Questions 1, 3, and 4 examined dichotomous outcome variables. For this reason, effect size calculations were converted from natural log odds ratios, using standardized mean differences ($d$) with the following equation:

$$d = \text{LogOddsRatio} \times \sqrt{3/\pi}$$

where $\pi$ (approximately 3.14159) is the mathematical constant (Borenstein, Hedges, Higgins, & Rothstein, 2009). The Cohen’s $d$ effect size calculations for Research Question 2 was computed by using the treatment coefficient ($\gamma_{01}$) from the multilevel model as the covariate-adjusted mean difference across groups (the numerator). The denominator was the pooled standard deviation weighted for sample size differences across groups (Borenstein, Hedges, Higgins, & Rothstein, 2009). The equation used in this analysis is as follows:

$$\text{Cohen's } d = \frac{\gamma_{01}}{SD_{\text{pooled}}}$$

where:

$$SD_{\text{pooled}} = \sqrt{\frac{(N_1 - 1)SD_1^2 + (N_2 - 1)SD_2^2}{N_1 + N_2 - 2}}$$

**Method by Research Question**

*RQ1a (c path):* To what extent is peer mentor membership associated with writing performance?
The multilevel model below addressed RQ1 by regressing, at Level 1, the natural log of the odds of being proficient in posttest writing performance \((Ln(p/1-p))_{ij}\) on pretest writing proficiency \((PREWRT)_{ij}\), for person \(i\) in cluster \(j\), plus a vector of demographics \((X_{2-N})_{ij}\), and treatment at Level 2 \((TREAT)_j\). All other Level 1 effects are fixed at Level 2.

Level 1 (student level): \(Ln(p/1-p)_{ij} = \beta_{0j} + \beta_{1j}(PREWRT)_{ij} + \beta_{2-Nj}(X_{2-N})_{ij} + e_{ij}\)

Level 2 (cluster level): \(\beta_{0j} = \gamma_{00} + \gamma_{01j}(TREAT)_j + u_{0j}\)

where:

\(Ln(p/1-p)_{ij}\) represents the natural log of the odds of being proficient on posttest measures of writing performance for person \(i\) in cluster \(j\)

\(\beta_{0j}\) is the average log odds of posttest writing proficiency in cluster \(j\) (adjusted)

\(\beta_{1j}\) is the relationship between pretest writing proficiency and the log odds of posttest writing proficiency for students in cluster \(j\)

\((X_{2-N})_{ij}\) is the notation for the vector of multiple demographic covariates, each having their own coefficient, \(\beta_{2-Nj}\)

\(\gamma_{00}\) is the estimated grand mean likelihood of posttest writing proficiency

\(\gamma_{01j}\) is the average treatment effect on the log odds of posttest writing proficiency \((c\ path)\)

**RQ1b. Exploratory:** Is the relationship between treatment status and writing performance dependent upon URM status?

The multilevel model below addressed RQ1, subpart \(b\), by regressing, at Level 1, the natural log of the odds of posttest writing proficiency \((Ln(p/1-p))_{ij}\) on posttest self-efficacy scores \((POSTSE)_{ij}\), student racial/ethnic identification \((URM)_{ij}\), and pretest
writing proficiency \((\text{PREWRIT})_{ij}\), for person \(i\) in cluster \(j\), plus a vector of demographics \((X_{4-N})_{ij}\), and treatment at Level 2 \((TREAT)_{j}\). All other Level 1 effects are fixed at Level 2.

Level 1 (student level):

\[
\ln(p/(1-p))_{ij} = \beta_{0j} + \beta_{1j} \text{(POSTSE)}_{ij} + \beta_{2j} \text{(URM)}_{ij} + \beta_{3j} \text{(PREWRITP)}_{ij} + \beta_{4-Nj} (X_{4-N})_{ij} + e
\]

Level 2 (cluster level):

\[
\beta_{0j} = \gamma_{00} + \gamma_{01} \text{(TREAT)}_{j} + u_{0j}
\]

\[
\beta_{2j} = \gamma_{20} + \gamma_{21} \text{(TREAT)}_{j}
\]

where:

\(\ln(p/(1-p))_{ij}\) represents the natural log of the odds of being proficient on posttest measures of writing performance for person \(i\) in cluster \(j\)

\(\beta_{0j}\) is the average log odds of posttest writing proficiency in cluster \(j\) (adjusted)

\(\beta_{1j}\) is the relationship between pretest self-efficacy scores and the log odds of posttest writing proficiency for students in cluster \(j\)

\(\beta_{2j}\) is the relationship between URM status and the log odds of posttest writing proficiency for students in cluster \(j\)

\(\beta_{3j}\) is the relationship between pretest writing proficiency and the log odds of posttest writing proficiency for students in cluster \(j\)

\((X_{4-N})_{ij}\) is the notation for the vector of multiple demographic covariates, each having their own coefficient, \(\beta_{4-Nj}\)

\(\gamma_{00}\) is the estimated grand mean likelihood of posttest writing proficiency

\(\gamma_{01}\) is the treatment effect on the log odds of posttest writing proficiency
\( \gamma_{20} \) the average relationship between URM and writing proficiency across all
students in all clusters

\( \gamma_{21} \) the cross-level interaction between URM and treatment on the log odds of
posttest writing proficiency

**RQ2a (a path):** To what extent is peer mentor membership associated with student levels
of self-efficacy?

The multilevel model below addressed RQ2 by regressing, at Level 1, posttest
self-efficacy scores \((Y_{ij})\) on pretest self-efficacy scores \((PRESE)_{ij}\), for person \(i\) in cluster \(j\),
plus a vector of demographics \((X_2 \cdot N)_{ij}\), and treatment at Level 2 \((TREAT)\). All other
Level 1 effects are fixed at Level 2.

Level 1 (student level): \(Y_{ij} = b_{0j} + b_{1j} (PRESE)_{ij} + b_{2 \cdot Nj} (X_2 \cdot N)_{ij} + e_{ij}\)

Level 2 (cluster level): \(b_{0j} = \gamma_{00} + \gamma_{01} (TREAT)_{j} + u_{0j}\)

where:

\( Y_{ij} \) is the dependent variable for self-efficacy posttest scores measured for person \(i\)
in cluster \(j\)

\( b_{0j} \) is the average self-efficacy posttest score in cluster \(j\) (adjusted)

\( b_{1j} \) is the relationship between self-efficacy pretest and posttest scores in cluster \(j\)

\((X_2 \cdot N)_{ij}\) is the notation for the vector of multiple demographic covariates, each
having their own coefficient, \(b_{2 \cdot Nj}\)

\( \gamma_{00} \) is the estimated grand mean of all posttest self-efficacy scores

\( \gamma_{01} \) is the overall treatment effect on self-efficacy \((a path)\)

**RQ2b. Exploratory:** Is the relationship between treatment status and self-efficacy
dependent upon URM status?
The multilevel model below addressed RQ2, subpart b, by regressing, at Level 1, posttest self-efficacy scores \( Y_{ij} \) on pretest self-efficacy scores \( (PRESE)_{ij} \), and student racial/ethnic identification \( (URM)_{ij} \) for person \( i \) in cluster \( j \), plus a vector of demographics \( (X_{3-N})_{ij} \), and treatment at Level 2 \( (TREAT)_{j} \), both as the primary IV of interest and as an interaction variable that seeks to better understand the relationship between URM students and writing performance. All other Level 1 effects are fixed at Level 2.

Level 1 (student level):

\[
Y_{ij} = \beta_{0j} + \beta_{1j} (PRESE)_{ij} + \beta_{2j} (URM)_{ij} + \beta_{3j} (POSTWRITP) + \beta_{4j} (X_{3-N})_{ij} + \epsilon
\]

Level 2 (cluster level):

\[
\beta_{0j} = \gamma_{00} + \gamma_{01} (TREAT)_{j} + u_{oj}
\]

\[
\beta_{2j} = \gamma_{20} + \gamma_{21} (TREAT)_{j}
\]

where:

- \( Y_{ij} \) is the dependent variable for self-efficacy posttest scores measured for person \( i \) in cluster \( j \)
- \( \beta_{0j} \) is the average self-efficacy posttest score in cluster \( j \) (adjusted)
- \( \beta_{1j} \) is the relationship between self-efficacy pretest and posttest scores in cluster \( j \)
- \( \beta_{2j} \) is the relationship between URM status and posttest self-efficacy scores for cluster \( j \)
- \( (X_{3-N})_{ij} \) is the notation for the vector of multiple demographic covariates, each having their own coefficient, \( \beta_{3-Nj} \)
- \( \gamma_{00} \) is the estimated grand mean of all posttest self-efficacy scores
- \( \gamma_{0j} \) is the treatment effect on posttest self-efficacy scores
\( \gamma_{20} \) is the average relationship between URM and posttest self-efficacy scores for all students in all clusters

\( \gamma_{21} \) is the cross-level interaction between URM and treatment on posttest self-efficacy scores

**RQ 3a (b/c’ path):** To what extent does student levels of self-efficacy mediate the relationship between peer mentorship and writing performance?

**RQ3b.** After controlling for treatment status, what is the relationship between student levels of self-efficacy and their writing performance (b path)?

**RQ3c.** What is the relationship between peer mentor membership and writing performance, after controlling for self-efficacy (c’ path)?

The multilevel model below addressed RQ3 by regressing, at Level 1, the natural log of the odds of posttest writing proficiency \( (\text{Ln}(p/1-p))_{ij} \) on posttest self-efficacy scores \( (SE)_{ij} \) and pretest writing performance \( (PREWRIT)_{ij} \), for person \( i \) in cluster \( j \), plus a vector of demographics \( (X_{3-N})_{ij} \), and treatment at Level 2 \( (TREAT)_{j} \). All other Level 1 effects are fixed at Level 2.

**Level 1 (student level):**

\[
\text{Ln}(p/1-p)_{ij} = \beta_{oij} + \beta_{ij}(POSTSE)_{ij} + \beta_{2j}(PREWRIT)_{ij} + \beta_{3-N}(X_{3-N})_{ij} + e_{ij}
\]

**Level 2 (cluster level):**

\[
\beta_{oij} = \gamma_{o00} + \gamma_{o1}(TREAT)_{j} + u_{oj}
\]

where:

\( \text{Ln}(p/1-p)_{ij} \) represents the natural log of the odds of being proficient on measures of posttest writing performance for person \( i \) in cluster \( j \)

\( \beta_{oij} \) is the average log odds of posttest writing proficiency in cluster \( j \) (adjusted)

\( \beta_{ij} \) is the relationship between self-efficacy posttest scores and the log odds of posttest writing proficiency in cluster \( j \) (b path)
\( \beta_{2j} \) is the relationship between pretest writing proficiency and the log odds of posttest writing proficiency for students in cluster \( j \).

\( (X_{2 \cdot N})_{ij} \) is the notation for the vector of multiple demographic covariates, each having their own coefficient, \( \beta_{2 \cdot Nj} \).

\( \gamma_{00} \) is the estimated grand mean of the log odds of being posttest proficient on measures of writing performance.

\( \gamma_{0j} \) is the overall direct effect (\( c' \) path).

**RQ4:** Does the strength of the relationship between URM student status and writing performance depend on levels of self-efficacy?

The logistic regression model below addressed RQ4 by regressing the natural log of the odds of posttest writing proficiency (\( Ln(p/1-p) \)) on posttest self-efficacy scores (\( POSTSE \)), student racial/ethnic identification (\( URM \)), pretest writing proficiency (\( PREWRIT \)), and an interaction variable that test whether the strength of the relationship between student’s racial/ethnic identification and the log odds of posttest writing proficiency depends on self-efficacy scores (\( URM \ast SE \)), plus a vector of demographics (\( X_{5 \cdot N} \)).

\[
Ln(p/1-p) = \beta_0 + \beta_1 (POSTSE) + \beta_2 (URM) + \beta_3 (PREWRIT) + \beta_4 (URM \ast SE) + \beta_5 (X_{5 \cdot N}) + e
\]

**Limitations**

Limitations identify potential weaknesses of the study as well as unavoidable threats to internal validity (Pajares, 2007). This study employed a quasi-experimental design (QED). QEDs are most often used when intact classrooms are used as the experimental and control group (Ary et al., 2006). The three threats to internal validity...
within this study included selection bias, maturation, and diffusion (Ary et al., 2006). The most common threat to internal validity of a quasi-experiment is selection bias (Ary et al., 2006). Within this study, selection bias occurred when proper randomization was not achieved, thus allowing for non-equivalent comparison groups prior to the beginning of the study (Ary et al., 2006). Although many checks for assumption violations were performed to ensure homogeneity within the sample, the faculty members that elected to participate in the writing intervention served as advocates for their students and by proxy, self-selected them into the study as potential participants. Within the department, there are seven stretch English faculty members—with only four electing to participate in the study. The three faculty members that chose not to participate were new to the institution as of Fall 2017. The three that elected not to participate were new to the institution, it is possible that the four Writing Project Faculty would have been more invested in additional in-class engagement strategies in the absence of the writing intervention.

Threats to internal validity caused by maturation can be explained as changes that occur within participants over time (Ary et al., 2006). Within the context of measuring the effects of an intervention over time—August to December—it is possible that the writing achievement observed in the participants is a result of the students’ natural maturation process as writers throughout the semester. This maturation process is especially evident when preexisting characteristics disproportionately advantage some groups toward higher performance than others. To account for initial differences between the groups on the outcome variables, a test for baseline equivalence will be performed prior to the regression analysis (Ary et al., 2006).
Diffusion occurs when participants in the experimental group communicate information about the treatment to control group participants (Ary et al., 2006). This spillover effect contaminates the purity of the control group, potentially leading to an erroneous treatment effect (Ary et al., 2006). The communication of ideas and experiences is no substitute for interaction. Since peer mentorship is such a personal and tangible experience, the interaction is difficult to replace secondhand. Although the control group may have obtained information about strategies and approaches to the writing process, the literature on writing center engagement suggests that these conversations are commonly communicated through in-center peer-to-peer interactions (Al Chibani, 2014; Archer & Richards, 2011). For this reason, the potential change in control group behavior mirrors that of a student who would attend the writing center—an option open to all clusters of treatment and control group participants.

Controlling for threats to external validity require a few additional considerations (Ary et al., 2006). External validity refers to the extent to which the study’s findings can be generalized to other subjects, settings, and treatments (Ary et al., 2006). While the method and pedagogy surrounding this institution’s approach to mainstreaming developmental English curriculum parallels many efforts throughout public higher education in the U.S., the generalizability of the findings from this study would be inaccurate. This exploratory study has developed a framework and structure useful for future research to evaluate the use of writing peer mentorship programs that seek to mobilize writing center efforts into first year English classes.
**Delimitations**

Delimitations are characteristics that limit the scope of the study and define boundaries that can be controlled by the researcher (Ary et al., 2006). While using a preexisting reliable Writing Self-Efficacy survey makes a valuable contribution to the study, this choice exposed my study to a delimitation. Although the survey construction was authored by Bandura (2006), and thus conceptually poised to capture the primary components of self-efficacy—the underpinning of Social Learning Theory, it may not completely capture all the workings of the other two conceptual and/or theoretical framings (Academic Capital Formation and Framework for Success in Post-Secondary Writing) used to guide this study. An additional delimitation of this study originates from the choice to implement the writing intervention for ENGL 100 exclusively. Although there were sections of ENGL 105—the second course in the stretch writing sequence—that occurred during the Fall 2017 semester, the institution’s retention data suggests that students that enroll in ENGL 105 during the following Fall term of their second year—as opposed to the sequential Spring term of their first year—are more likely to persist to subsequent semesters.

**Potential Researcher Bias**

Motivated by the call to educational activism, I approach the process of inquiry with an open, yet historically informed mind that is passionately and introspectively influenced by the socioeconomic challenges of my youth. My inquisition of educational rhetoric, policy, and practice is largely predisposed by my commitment and responsibility to underrepresented student groups.
Critical realism tells us that although the interactions between the natural and the social world are often observed separately, the boundaries between the two are quite entangled (Wilson, 2012). Through the lens of this framework, my hope is to inspire a generation of thinkers who understand the historical narrative of American education, yet are compelled and motivated to inspire today’s youth to obtain the social, cultural, and human capital needed to become economically self-sufficient. Analyzing data, listening to, sharing, and preserving the cultural undertones, and untold truths of those who sit on America’s margins, is perhaps one of the most critical components to mobilizing the American potential. For this reason, it is important that those who are uniquely positioned to articulate the magnitude of the need and possess the quantitative and linguistic capital needed to raise awareness, do so in a way that contributes to the body of knowledge in a “culturally acceptable,” yet transformational way. Herein lie the meaning, approach, and voice of advocacy that exist within me as a researcher. Although it is critically important that I maintained a clinical distance (unbiased perspective) from individual data collected, I will constantly seek to ask and answer questions designed to address the magnitude of the issue of college access, persistence, and graduation for underrepresented student groups.
CHAPTER 4

RESULTS

This inquiry is designed to investigate the relationship between writing peer mentorship, self-efficacy, and the likelihood of posttest writing performance. Using a cluster quasi-experimental design, this study examined the main effect of treatment (peer mentorship) on student outcomes (writing performance and self-efficacy). The analysis addresses the hypothesis that self-efficacy mediates the relationship between peer mentorship and student outcomes, after controlling for covariates. The regression analysis for all research questions are based on model estimates and should not be interpreted as exact figures. Each research question and their respective analyses will be described independently.

Establishing Baseline Equivalence

The What Works Clearinghouse (WWC) is an initiative put forth by the U.S. Department of Education to evaluate research studies that examine educational programs, policies, and practices, otherwise known as interventions (Institute of Education Sciences, 2014). WWC uses baseline equivalence to determine if the treatment and control groups are equal in expected outcomes prior to an educational intervention. WWC recommends the use of standardized mean differences, called effect sizes, to determine whether there is baseline equivalence between the treatment and control group (Institute of Education Sciences, 2014). WWC considers treatment and control groups equivalent at baseline when the corresponding effect sizes are less than or equal to 0.05 standard deviations (Institute of Education Sciences, 2014). It is important to note that studies can meet the baseline equivalence standard if the effect size is less than 0.25.
(Institute of Education Sciences, 2014). Standard deviation and impact models display baseline differences between 0.05 and 0.25 standard deviations (Institute of Education Sciences, 2014). Table 5 displays the effect size for each covariate that is correlated with the outcome variables.

Table 5

**Effect Size Calculations (Baseline)**

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Mean (or %)</th>
<th>SD</th>
<th>Mean (or %)</th>
<th>SD</th>
<th>Cohen’s $d$</th>
<th>Hedges’ $g$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>Control</td>
<td>Treatment</td>
<td>Treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest writing proficiency</td>
<td>0.32</td>
<td>0.47</td>
<td>0.35</td>
<td>0.48</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>Pretest Self-efficacy score</td>
<td>216.63</td>
<td>35.82</td>
<td>205.45</td>
<td>40.09</td>
<td>-0.29</td>
<td>-0.28</td>
</tr>
<tr>
<td>High school GPA</td>
<td>3.00</td>
<td>0.84</td>
<td>3.00</td>
<td>0.61</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>ACT scores</td>
<td>14.95</td>
<td>6.03</td>
<td>14.76</td>
<td>6.01</td>
<td>-0.03</td>
<td>-0.03</td>
</tr>
</tbody>
</table>

*Note:* Treatment $n = 88$; Control $n = 38$

Effect sizes were computed using Cohen’s $d$ and Hedges’ $g$ calculations (Institute of Education Sciences, 2014). Effect sizes were calculated for the achievement variables represented in Table 5. Cohen’s $d$ was computed to establish baseline equivalence for pretest writing scores at $d = 0.06$, pretest self-efficacy scores at $d = 0.29$, high school GPA at $d = 0.00$, and ACT scores at $d = 0.03$. Hedges’ $g$ was also computed to establish baseline equivalence, as this effect size calculation enables an adjustment for small sample sizes (Hedges, 1981). Hedges’ $g$ scores also indicate baseline equivalence for pretest writing scores at $g = 0.06$, pretest self-efficacy scores at $g = 0.28$, high school GPA at $g = 0.00$, and ACT scores at $g = 0.03$. Both effect size calculations for pretest writing, the primary DV of interest, demonstrate baseline equivalence between the
treatment and control group, as differences were between 0.05 and 0.25. (Institute of Education Sciences, 2014).

Table 6 displays descriptive statistics for the outcome variables posttest writing proficiency and posttest self-efficacy scores. On both outcome measures, the control group outperformed the treatment group. For measures of writing performance, the odds of the control group scoring proficient was 76.3%, whereas, the odds of the treatment group scoring proficient was 58%. For self-efficacy, the average student in the control group scored 7.62 points higher on the posttest than those in the treatment group.

Table 6

Descriptive Statistics on the Outcome Variables

<table>
<thead>
<tr>
<th></th>
<th>Control (n = 38)</th>
<th>Treatment (n = 88)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Proficient % Non-Proficient</td>
<td>% Proficient % Non-Proficient</td>
</tr>
<tr>
<td>Writing Proficiency</td>
<td>76.3% 23.7%</td>
<td>58.0% 42.0%</td>
</tr>
<tr>
<td></td>
<td>Mean 239.08 SD 34.36</td>
<td>Mean 231.46 SD 38.45</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Confirmatory Analyses: Main Effect of Peer Mentorship on Students

The primary purpose of this study was to address Research Question 1: To what extent is peer mentorship associated with writing performance and; Research Question 2: To what extent is peer mentor membership associated with student levels of self-efficacy? Multilevel modeling was used to estimate the effects of the peer mentor program (treatment) on student levels of writing achievement and self-efficacy. The assignment to treatment or control conditions occurred at the instructor level, while the outcome of interest resides at the student level. To improve the estimate of the treatment effect, the model also included a set of covariates that are hypothesized to be correlated with the
outcome measures (writing achievement and self-efficacy). This set of covariates included both demographic and achievement variables. Some student-level (Level 1) covariates were also used in aggregate at the instructor level (Level 2).

The Level 1 achievement variables included pretest writing (PREWRIT), pretest self-efficacy (PRESE), high school GPA (HSGPA), and ACT/SAT English score (ACT). Although some studies suggest a difference between ACT and SAT scores for placement purposes (Aiken et al., 1998), the two scores are often combined into a single measure as a college entrance exam (Bettinger & Long, 2009; Boatman & Long, 2010; Greene & Forster, 2003). The ACT is the most popular entrance examination with 98% of students submitting a score. The remaining students’ SAT scores were converted to ACT scores based on the jointly published ACT/SAT guidelines established by ACT and the College Board (ACTSAT, 2018).

The Level 1 demographic covariates included gender (GEND), Pell eligibility as a proxy for SES (PELL), and first generation student status (FGen). Racial/ethnic identification was also included as a covariate using a set of race contrast codes that included Asian (ASIAN), Black (BLK), Hispanic (HISP), Native American (NTAM), and Multitrace (MULTI), each of which allows outcome comparisons between the selected group of students and White students (WHT) as the reference group. In some cases, a dichotomously coded variable indicating underrepresented minority student status (URM) was used as a substitute for race contrast codes, with White students also serving as the reference group.

The Level 2 model included the treatment variable (TREAT). Since the sample included larger numbers at Level 1 (students) but relatively small numbers at Level 2 (12
Instructors of ENGL 100), the inclusion of Level 2 covariates were handled much more conservatively. Grand mean centering was facilitated for all independent variables to observe a more realistic interpretation of the coefficients. Two exploratory questions were included for RQ1 and RQ2 to independently examine the interaction between URM status and the outcome variables.

**Research Question 1**

The main effect estimates from RQ1a “To what extent is peer mentorship associated with writing performance (c path)?” are provided in Table 7. Table 7 includes estimates of relationships between independent variables and posttest writing proficiency for the $n = 126$ students in the analyzed sample. The outcome variable of interest is posttest writing proficiency, represented as $1 = $ proficient and $0 = $ not proficient. Descriptive statistics for these data can be found in Table 3. In the context of the binomial model, the outcome variable $Y_{ij}$ is the log odds of posttest writing performance $\ln(p/(1-p))_{ij}$. It is assumed that each student $i$ in classroom $j$ has some probability of scoring proficient. Logistical regression coefficients can be difficult to interpret. For this reason, coefficients have been converted to odds ratios, providing a practical interpretation of the coefficient.

Treatment status (TREAT) was the primary IV of interest included in this model and was included at Level 2. Treatment status is defined as either working with a writing peer mentor (Treatment = 1) or not (Control = 0). The treatment effect was negative ($\beta_{1} = -0.92, SE = 0.58, OR = 0.40, p = 0.14, d = -0.50$), indicating that the odds of posttest writing proficiency for the students in the control group were 60% higher than those in
the treatment group. The WWC would characterize an effect size of -0.50 as “substantively important,” since it is smaller than -0.25.

Table 7

Estimates of Fixed Effects on the Log Odds of Posttest Writing Proficiency

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Level</th>
<th>Coefficient</th>
<th>Odds Ratio</th>
<th>Standard Error</th>
<th>t ratio</th>
<th>p Value</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREWRIT</td>
<td>Student</td>
<td>0.86</td>
<td>2.37</td>
<td>0.45</td>
<td>1.90</td>
<td>0.06</td>
<td>0.96 5.81</td>
</tr>
<tr>
<td>HSGPA</td>
<td>Student</td>
<td>-0.10</td>
<td>0.90</td>
<td>0.33</td>
<td>-0.31</td>
<td>0.76</td>
<td>0.47 1.73</td>
</tr>
<tr>
<td>ACT</td>
<td>Student</td>
<td>0.02</td>
<td>1.02</td>
<td>0.03</td>
<td>0.58</td>
<td>0.56</td>
<td>0.95 1.09</td>
</tr>
<tr>
<td>GEND</td>
<td>Student</td>
<td>-0.79</td>
<td>0.45</td>
<td>0.42</td>
<td>-1.88</td>
<td>0.06</td>
<td>0.20 1.05</td>
</tr>
<tr>
<td>PELL</td>
<td>Student</td>
<td>0.25</td>
<td>1.29</td>
<td>0.45</td>
<td>0.56</td>
<td>0.58</td>
<td>0.53 3.16</td>
</tr>
<tr>
<td>FGen</td>
<td>Student</td>
<td>-0.53</td>
<td>0.59</td>
<td>0.47</td>
<td>-1.12</td>
<td>0.26</td>
<td>0.23 1.50</td>
</tr>
<tr>
<td>URM</td>
<td>Student</td>
<td>0.21</td>
<td>1.23</td>
<td>0.43</td>
<td>0.48</td>
<td>0.63</td>
<td>0.52 2.91</td>
</tr>
<tr>
<td>TREAT</td>
<td>Instructor</td>
<td>-0.92</td>
<td>0.40</td>
<td>0.58</td>
<td>-1.60</td>
<td>0.14</td>
<td>0.11 1.14</td>
</tr>
</tbody>
</table>

Level 1 predictors HSGPA and ACT scores are noted to be consistent with standardized measures of writing achievement (Adelman 1999, 2006). While both variables are conceptually highly predictive of first year achievement, HSGPA did not prove to be predictive of posttest writing performance. As a student’s HSGPA increases by 1 point, the odds of posttest writing performance decreases by 10% ($\beta_2 = -0.10, SE = 0.45, OR = 0.90, p = 0.76$). For ACT scores ($\beta_3 = 0.02, SE = 0.03, OR = 1.02, p = 0.56$), the results suggest that a for every 1 point increase in ACT scores, the odds of posttest writing performance increases by 2%. Pretest scores are also included in the model and prove to be significant ($\beta_4 = 0.86, SE = 0.45, OR = 2.37, p = 0.06$).

Research Question 1 (Part b) asks the questions: Is the relationship between treatment status and writing performance dependent upon URM status? Table 8 display estimates of the interaction between posttest writing, treatment, and URM status. The variable of interest is the interaction term (URM*TREAT). The analysis reveal that there
is no statistically significant difference in treatment effect by URM status ($\beta_{21} = -0.06, SE = 0.98, OR = 0.94, p = 0.95, d = -0.50$).

Table 8

*Estimates of the Interaction between URM status and Posttest Writing Performance*

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Level</th>
<th>Coefficient</th>
<th>Odds Ratio</th>
<th>Standard Error</th>
<th>t ratio</th>
<th>p Value</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREWRT</td>
<td>Student</td>
<td>0.88</td>
<td>2.41</td>
<td>0.45</td>
<td>1.93</td>
<td>0.06</td>
<td>0.98 - 5.98</td>
</tr>
<tr>
<td>POSTSE</td>
<td>Student</td>
<td>0.00</td>
<td>1.00</td>
<td>0.00</td>
<td>0.47</td>
<td>0.69</td>
<td>1.99 - 1.01</td>
</tr>
<tr>
<td>URM</td>
<td>Student</td>
<td>0.19</td>
<td>1.21</td>
<td>0.45</td>
<td>0.42</td>
<td>0.68</td>
<td>0.49 - 2.95</td>
</tr>
<tr>
<td>HSGPA</td>
<td>Student</td>
<td>-0.09</td>
<td>0.91</td>
<td>0.33</td>
<td>-0.27</td>
<td>0.79</td>
<td>0.48 - 1.76</td>
</tr>
<tr>
<td>ACT</td>
<td>Student</td>
<td>0.02</td>
<td>1.02</td>
<td>0.03</td>
<td>0.55</td>
<td>0.58</td>
<td>0.95 - 1.09</td>
</tr>
<tr>
<td>GEND</td>
<td>Student</td>
<td>-0.73</td>
<td>0.48</td>
<td>0.44</td>
<td>-1.68</td>
<td>0.10</td>
<td>0.20 - 1.14</td>
</tr>
<tr>
<td>PELL</td>
<td>Student</td>
<td>0.25</td>
<td>1.28</td>
<td>0.45</td>
<td>0.54</td>
<td>0.59</td>
<td>0.52 - 3.16</td>
</tr>
<tr>
<td>FGen</td>
<td>Student</td>
<td>-0.53</td>
<td>0.59</td>
<td>0.47</td>
<td>-1.11</td>
<td>0.27</td>
<td>0.23 - 1.51</td>
</tr>
<tr>
<td>URM*TREAT</td>
<td>Student</td>
<td>-0.06</td>
<td>0.94</td>
<td>0.98</td>
<td>-0.06</td>
<td>0.95</td>
<td>0.13 - 6.59</td>
</tr>
<tr>
<td>TREAT</td>
<td>Instructor</td>
<td>-0.92</td>
<td>0.40</td>
<td>0.59</td>
<td>-1.57</td>
<td>0.15</td>
<td>0.11 - 1.47</td>
</tr>
</tbody>
</table>

**Research Question 2**

The main effect estimates for the outcome variable $Y_{ij}$ (posttest self-efficacy) are provided in Table 9. RQ2a is “To what extent is peer mentorship associated with student levels of self-efficacy (a path)?” The outcome variable of interest is posttest self-efficacy scores, represented on a continuous scale from 0 – 400. Treatment status (TREAT) was the primary IV of interest in this model and was included at Level 2. The treatment effect estimate was negative but not statistically significant ($\beta_{1i} = -0.65, SE = 7.91, p = 0.936, d = -0.02$), indicating that students in the control group outperformed students in the treatment group on measures of posttest self-efficacy scores by 0.65 points (Range: 0 – 400).
Table 9

Estimates of Fixed Effects on Posttest Self-Efficacy Scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t Ratio</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESE</td>
<td>Student</td>
<td>0.58</td>
<td>0.06</td>
<td>9.09</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HSGPA</td>
<td>Student</td>
<td>-3.33</td>
<td>3.80</td>
<td>-0.88</td>
<td>0.383</td>
</tr>
<tr>
<td>ACT</td>
<td>Student</td>
<td>-0.28</td>
<td>0.43</td>
<td>-0.64</td>
<td>0.521</td>
</tr>
<tr>
<td>GEND</td>
<td>Student</td>
<td>-14.29</td>
<td>5.23</td>
<td>-2.73</td>
<td>0.007</td>
</tr>
<tr>
<td>PELL</td>
<td>Student</td>
<td>4.12</td>
<td>5.58</td>
<td>0.738</td>
<td>0.462</td>
</tr>
<tr>
<td>FGen</td>
<td>Student</td>
<td>-2.86</td>
<td>5.55</td>
<td>-0.515</td>
<td>0.608</td>
</tr>
<tr>
<td>RACE-ASIAN</td>
<td>Student</td>
<td>36.67</td>
<td>13.20</td>
<td>2.78</td>
<td>0.007</td>
</tr>
<tr>
<td>RACE-BLK</td>
<td>Student</td>
<td>3.90</td>
<td>7.71</td>
<td>0.505</td>
<td>0.614</td>
</tr>
<tr>
<td>RACE-HISP</td>
<td>Student</td>
<td>41.53</td>
<td>27.23</td>
<td>1.525</td>
<td>0.130</td>
</tr>
<tr>
<td>RACE-NTAM</td>
<td>Student</td>
<td>2.81</td>
<td>8.03</td>
<td>0.350</td>
<td>0.727</td>
</tr>
<tr>
<td>TREAT</td>
<td>Instructor</td>
<td>-0.65</td>
<td>7.91</td>
<td>-0.082</td>
<td>0.936</td>
</tr>
</tbody>
</table>

The Level 1 predictors of standardized measures achievement included in this model are HSGPA ($\beta_2 = -3.33$, $SE = 3.80$, $p = 0.38$) and ACT scores ($\beta_3 = -0.28$, $SE = 0.43$, $p = 0.52$). As a student’s GPA score increases by 1 point, their level of self-efficacy decreases by 3.33 points. For ACT scores, as a student’s ACT score increases by 1 unit, their level of self-efficacy decreases by 0.28 points. Pretest scores are also included in the model and prove to be predictive of the outcome variable ($\beta_4 = 0.58$, $SE = 0.06$, $p < 0.001$).

Research Question 2 (Part b) asks the questions: Is the relationship between treatment status and self-efficacy dependent upon URM status? The data in Table 10 displays estimates of the interaction between posttest self-efficacy scores, treatment, and URM status. The variable of interest is the interaction term (URM*TREAT). The analysis reveals that there is no statistically significant difference in treatment effect by URM status ($\gamma_{21} = 4.47$, $SE = 11.57$, $p = 0.70$, $d = 0.02$).
Table 10

Estimates of the Interaction between URM status and Posttest Self-Efficacy Scores

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Level</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t Ratio</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESE</td>
<td>Student</td>
<td>0.58</td>
<td>0.07</td>
<td>8.88</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>POSTWRITP</td>
<td>Student</td>
<td>0.99</td>
<td>5.41</td>
<td>0.18</td>
<td>0.85</td>
</tr>
<tr>
<td>URM</td>
<td>Student</td>
<td>11.10</td>
<td>5.44</td>
<td>2.04</td>
<td>0.04</td>
</tr>
<tr>
<td>HSGPA</td>
<td>Student</td>
<td>-3.02</td>
<td>3.94</td>
<td>-0.77</td>
<td>0.44</td>
</tr>
<tr>
<td>ACT</td>
<td>Student</td>
<td>-0.16</td>
<td>0.44</td>
<td>-0.36</td>
<td>0.72</td>
</tr>
<tr>
<td>GEND</td>
<td>Student</td>
<td>-12.51</td>
<td>5.38</td>
<td>-2.32</td>
<td>0.02</td>
</tr>
<tr>
<td>PELL</td>
<td>Student</td>
<td>4.54</td>
<td>5.63</td>
<td>0.81</td>
<td>0.42</td>
</tr>
<tr>
<td>FGen</td>
<td>Student</td>
<td>-2.31</td>
<td>5.77</td>
<td>-0.40</td>
<td>0.69</td>
</tr>
<tr>
<td>URM*TREAT</td>
<td>Student</td>
<td>4.47</td>
<td>11.57</td>
<td>0.39</td>
<td>0.70</td>
</tr>
<tr>
<td>TREAT</td>
<td>Instructor</td>
<td>0.89</td>
<td>7.07</td>
<td>0.13</td>
<td>0.90</td>
</tr>
</tbody>
</table>

Research Question 3: Self-Efficacy as a Mediator (Indirect Treatment Effects)

The purpose of the mediation analysis was to address Research Question 3a: “To what extent does student levels of self-efficacy mediate the relationship between peer mentorship and writing performance?” Research Question 3a seeks to understand the extent to which student levels of self-efficacy mediate the relationship between peer mentorship and the odds of writing performance. This question is answered in two parts, with both parts derived from the same statistical model and displayed in Table 11. Part A calculates the $b$ path, which seeks to analyze the relationship between self-efficacy and writing performance, whereas Part B analyzes the overall treatment effect ($c'$ path) of the intervention.

Part A. “After controlling for treatment status, what is the relationship between student levels of self-efficacy and their writing performance ($b$ path)?” The results are displayed below in Table 11. Posttest self-efficacy ($POSTSE$) was included in this model and was observed at Level 1. For posttest self-efficacy, the effect was null ($\beta_{ij} = 0.00$, $SE = 0.01$, OR = 1.00, $p = 0.69$, $d = -0.50$). At Level 1, predictors typically consistent
with predicting writing performance revealed a contrary correlation. High school GPA showed an inverse relationship to treatment ($\beta_{ij} = -0.09$, $SE = 0.33$, OR = 0.92, $p = 0.79$). As student’s GPA increases by 1 unit, the odds of posttest writing proficiency decreased by 8%.

Table 11

Estimates from the Model Containing Mediation Path Coefficients

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Level</th>
<th>Coefficient</th>
<th>Odds Ratio</th>
<th>Standard Error</th>
<th>t ratio</th>
<th>p Value</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSTSE</td>
<td>Student</td>
<td>0.00</td>
<td>1.00</td>
<td>0.01</td>
<td>0.40</td>
<td>0.69</td>
<td>0.99 - 1.01</td>
</tr>
<tr>
<td>PREWRT</td>
<td>Student</td>
<td>0.88</td>
<td>2.41</td>
<td>0.45</td>
<td>1.93</td>
<td>0.06</td>
<td>0.98 - 5.94</td>
</tr>
<tr>
<td>HSGPA</td>
<td>Student</td>
<td>-0.09</td>
<td>0.92</td>
<td>0.33</td>
<td>-0.27</td>
<td>0.79</td>
<td>0.48 - 1.76</td>
</tr>
<tr>
<td>ACT</td>
<td>Student</td>
<td>0.02</td>
<td>1.02</td>
<td>0.03</td>
<td>0.55</td>
<td>0.59</td>
<td>0.95 - 1.01</td>
</tr>
<tr>
<td>GEND</td>
<td>Student</td>
<td>-0.73</td>
<td>0.48</td>
<td>0.44</td>
<td>-1.68</td>
<td>0.09</td>
<td>0.20 - 1.14</td>
</tr>
<tr>
<td>PELL</td>
<td>Student</td>
<td>0.24</td>
<td>1.28</td>
<td>0.45</td>
<td>0.54</td>
<td>0.59</td>
<td>0.52 - 3.14</td>
</tr>
<tr>
<td>FGen</td>
<td>Student</td>
<td>-0.52</td>
<td>0.59</td>
<td>0.47</td>
<td>-1.11</td>
<td>0.27</td>
<td>0.23 - 1.51</td>
</tr>
<tr>
<td>URM</td>
<td>Student</td>
<td>0.18</td>
<td>1.20</td>
<td>0.44</td>
<td>0.41</td>
<td>0.68</td>
<td>0.50 - 2.87</td>
</tr>
<tr>
<td>TREAT</td>
<td>Instructor</td>
<td>-0.92</td>
<td>0.40</td>
<td>0.59</td>
<td>-1.57</td>
<td>0.15</td>
<td>0.11 - 1.47</td>
</tr>
</tbody>
</table>

Turning attention to demographic indicators, the effect was also negative for first generation students, controlling for covariates. The odds for students who self-identified as first generation college students were 41% less likely to score proficient on measures of posttest writing proficiency, after controlling for posttest self-efficacy scores ($\beta_{4j} = -0.52$, $SE = 0.47$, OR = 0.59, $p = 0.27$). A similar trend is noteworthy for gender ($0 =$ Female, $1 =$ Male), yielding significance at $p < 0.10$. The odds of males scoring proficient on measures of posttest writing were 52% less likely than females ($\beta_{5j} = -0.73$, $SE = 0.44$, OR = 0.48, $p = 0.09$).

Part B. “What is the relationship between peer mentorship and writing performance, after controlling for self-efficacy (c’ path)?” Treatment status (TREAT) was included in the model and observed at Level 2. The treatment effect was negative
\( (\gamma_{01} = -0.92, \text{OR} = 0.40, \text{SE} = 0.59, p = 0.15) \), indicating that the odds of posttest writing proficiency were 60% higher for students in the control group. While the \( p \) value suggests that there is no statistically significant difference in groups between treatment and control, Cohens’ \( d \) calculation \( (d = -0.50) \) suggest that the difference in groups is substantial, as the WWC defines “substantively important,” as a \( d > 0.25 \) and \( d < -0.25 \).

**Calculations for the Mediation Analysis**

The next step in this multilevel mediation analysis is to test the hypothesis that self-efficacy mediates the effect of peer mentorship on writing performance. Since the coefficients from the analysis are on different scales (both binary and continuous) Dwyer and MacKinnon’s (1993) direction on standardization must be followed. For this reason, all coefficients estimates are reduced to the same scale as displayed in Table 12.

**Table 12**

*Standardization of Coefficients from the Mediation Regression Analysis*

<table>
<thead>
<tr>
<th>Analyzed Path</th>
<th>Coefficient</th>
<th>SE</th>
<th>Method of Standardization</th>
<th>Standardized Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>( a ) path</td>
<td>-0.65</td>
<td>7.91</td>
<td>-0.65/7.91</td>
<td>-0.08</td>
</tr>
<tr>
<td>( b ) path</td>
<td>0.00</td>
<td>0.01</td>
<td>0.00/0.01</td>
<td>0.00</td>
</tr>
<tr>
<td>( c ) path</td>
<td>-0.92</td>
<td>0.58</td>
<td>-0.92/0.58</td>
<td>-1.59</td>
</tr>
<tr>
<td>( c' ) path</td>
<td>-0.92</td>
<td>0.59</td>
<td>-0.92/0.59</td>
<td>-1.56</td>
</tr>
</tbody>
</table>

Table 12 displays the conversion of the standardized coefficients calculated from the regression analysis performed on paths \( a \), \( b \), \( c \), and \( c' \). The standardized coefficients are then used to compute estimates of mediation using the *Sobel test* (Jasti, Dudley, & Goldwater, 2008). These estimates are displayed in Figure 7.
An approximation of the direct and indirect effects can be analyzed using the following expression:

\[ c \approx c' + ab \]

where \( c \) is the total effect (-1.59) from the main effect of treatment analysis, \( c' \) is the direct (unmediated) effect (-1.56) from the mediation analysis, and \( ab \) is the indirect effect of peer mentorship on student performance (0.00). With these calculations, it is possible to estimate that the indirect or mediation effect of self-efficacy is (0.00/-1.56) 0% of the total effect on treatment. These results invalidate the hypothesis that self-efficacy mediates the relationship between peer mentorship and the odds of writing performance.

**Understanding Writing Performance and URM Students**

Research Question 4 seeks to understand more about the relationship between URM students, the odds of posttest writing proficiency, and self-efficacy. The question is: “Does the strength of the relationship between URM student status and writing performance depend on levels of self-efficacy?” The data in Table 12 display estimates of a multiplicative interaction variable that test whether the strength of the relationship
between student’s racial/ethnic identification and the log odds of posttest writing proficiency depends on self-efficacy scores \((URM \times POSTSE)\).

Table 13

*Estimates of the Interaction between URM status and Posttest Writing Performance*

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Level</th>
<th>Coefficient</th>
<th>Odds Ratio</th>
<th>Standard Error</th>
<th>p Value</th>
<th>95% CI for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREWRT</td>
<td>Student</td>
<td>0.82</td>
<td>2.28</td>
<td>0.44</td>
<td>0.06</td>
<td>0.95</td>
</tr>
<tr>
<td>POSTSE</td>
<td>Student</td>
<td>0.00</td>
<td>1.00</td>
<td>0.01</td>
<td>0.69</td>
<td>0.98</td>
</tr>
<tr>
<td>URM</td>
<td>Student</td>
<td>0.86</td>
<td>2.37</td>
<td>2.95</td>
<td>0.77</td>
<td>0.00</td>
</tr>
<tr>
<td>HSGPA</td>
<td>Student</td>
<td>-0.13</td>
<td>0.88</td>
<td>0.32</td>
<td>0.68</td>
<td>0.47</td>
</tr>
<tr>
<td>ACT</td>
<td>Student</td>
<td>0.03</td>
<td>1.03</td>
<td>0.03</td>
<td>0.44</td>
<td>0.96</td>
</tr>
<tr>
<td>GEND</td>
<td>Student</td>
<td>-0.87</td>
<td>0.42</td>
<td>0.42</td>
<td>0.04</td>
<td>0.18</td>
</tr>
<tr>
<td>PELL</td>
<td>Student</td>
<td>0.17</td>
<td>1.19</td>
<td>0.45</td>
<td>0.70</td>
<td>0.49</td>
</tr>
<tr>
<td>FGen</td>
<td>Student</td>
<td>-0.51</td>
<td>0.60</td>
<td>0.46</td>
<td>0.26</td>
<td>0.24</td>
</tr>
<tr>
<td>URM*POSTSE</td>
<td>Student</td>
<td>-0.03</td>
<td>0.99</td>
<td>0.01</td>
<td>0.82</td>
<td>0.97</td>
</tr>
</tbody>
</table>

The variable of interest is the interaction term \((URM*POSTSE)\). The data reveal that there is no statistically significant difference in the relationship between posttest self-efficacy scores and writing performance by URM status \((\beta_t = -0.03, SE = 0.01, OR = 0.99, p = 0.82)\).
CHAPTER 5
CONCLUSION

This study was designed to take a comprehensive look at one writing peer mentor program designed to increase both writing achievement and writing self-efficacy for students who obtained entrance into the university, by way of the developmental course sequence. This study employed a cluster quasi experimental design using both logistic regression and multi-level modeling to analyze the data associated with this study. Baseline equivalence was tested for pretest writing proficiency and self-efficacy scores, as well as past performance indicators such as HS GPA and ACT scores.

Summary of Results

Examining the results, it has been concluded that the treatment (peer mentorship) was ineffective. Post-test self-efficacy and writing performance scores for students in the control group were positive, albeit, not statistically significant from students who received the treatment condition (peer mentorship). Pretest self-efficacy scores for the control group were, however, greater for students in the control group than in the treatment ($p > 0.25$), indicating that the students in the control group were more likely to have higher scores on the posttest, as pretest scores are highly predictive of posttest performance. While the mediation analysis was not predictive of the hypothesis that self-efficacy has an independent relationship with writing performance, thereby mediating the relationship between peer mentorship and writing performance, there were valuable lessons learned about peer mentorship and developmental writing programs.
Research Question 1: The Effect of Peer Mentorship on Writing Performance

The main effect of peer mentorship on writing performance was measured with Research Question 1a “To what extent is peer mentorship associated with writing performance (c path)?” For RQ1a, HS GPA and FGen had a negative main effect. While HS GPA is said to be predictive of college student success (Tinto, 2012), its predicative ability is inverse for college writing performance (Adelman, 2006). Although the subjective nature of grades in high school provides orientation toward schooling and signals toward the odds of success in higher education, they are more predictive of task completion and follow through than quality and accuracy of writing composition (Tinto, 2002, 2012). For first generation college students, the negative main effect on the odds of posttest writing performance is predictable. Parental college completion is a social indicator of cultural capital (Checci, 2006). The degree to which a family is exposed to cultural capital is often evident in the way a student progresses in the learning environment. When students lack embodied cultural capital (linguistic command of standardized English) their ability to confidently approach the writing process can be greatly compromised (Bourdieu & Passeron, 1970; DiMaggo, 1982; Hinton, 2015).

ACT scores, Pell eligibility, and URM status showed positive effects. The positive effect for ACT scores was predictable. Standardized test such as the ACT are found to be more reliable and objective predictors of writing performance than HS GPA (Atkinson, 2009). Positive effects for Pell eligibility and URM minority status diverge from the literature’s stance on family social status as a predictor of college success. While family social status is said to be a powerful predictor of academic achievement, the educational environment (supportive peers, small class sizes, adept faculty) often
compensates for the lack of family college going behavior and economic positioning (Checchi, 2006; Tinto, 2012). In fact, student experiences in the classroom are critical to persistence, because the classroom creates a space whereby students build academic identity (St. John, Hu, & Fisher, 2011). Classroom success is said to alleviate cognitive stress that occurs during academic integration and helps students to internalize the academy as a place and space for their learning, growth, and development (St. John, Hu, & Fisher, 2011).

The odds of posttest writing proficiency for males was less than the odds for females. Scholars who examine matriculation and persistence in higher education have noted that writing self-efficacy is found to be higher in females at each level of schooling than males (Pajares, et al., 2003). As previously noted, the college matriculation and achievement gap—particularly amongst URM males—continues to widen after controlling for gender (Pajares, 2003; Reid & Moore, 2008; Strayhorn, 2011).

While the treatment effect size for writing performance is meaningful in the context of this study ($d = -0.50$), the findings were not consistent in the context of writing interventions. For example, Graham and Perin (2007) conducted a synthesis of effect sizes on writing intervention literature (Grades 4 – 12), focusing their efforts on experimental and quasi-experimental studies. The average effect size examined in their analysis most relevant to this study was peer assistance (students working together to plan, draft, and/or revise their compositions) at $d = 0.75$. Specifically, they computed seven effect sizes whereby the treatment included peers working together to plan, draft, and revise their compositions. The control conditions against which peer assistance was compared always involved students working alone. Given that the scores broadly
focused on Grades 4 – 12, the comparison to first year college writers is reasonable given the degree of development in writing between 12th Grade and the first year college writing experience for developmental writers (Graham & Perin, 2007). With this information, it can be deduced that this study’s treatment effect size ($d = -0.50$) is inconsistent with findings from similar studies. This fact further suggests that while the control group outperformed the treatment group on measures of writing performance, the finding are inconsistent with the body of work that focuses on writing interventions.

**Research Question 2: The Effect of Peer Mentorship on Self-Efficacy**

For measures of self-efficacy examined in Research Question 2a, “To what extent is peer mentorship associated with student levels of self-efficacy (a path)?” HS GPA, ACT scores, and FGen status all had negative main effects. The negative effects of HS GPA and ACT scores on measures of self-efficacy was counterintuitive, suggesting that students with higher grades and ACT scores are less likely to be confident in their ability to write. Observing the literature on this inverse relationship, it is meaningful to note that the better a student becomes at performing tasks that are greater in complexity, the less likely they are to feel confident when asked to perform (Bandura, 1998; Pajares, 2006). This commonly known condition is called *imposter syndrome* and is prevalent with students who are the first in their immediate family to attend college (Kolligian & Sternberg, 1991). Both Pell eligibility and race variables displayed positive effects, suggesting that family income status and racial ethnic identification were not a factor in expressing confidence toward the task of writing.
Research Question 3: Self-Efficacy as a Mediator (Indirect Treatment Effects)

The purpose of the mediation analysis was to address Research Question 3a: “To what extent does student levels of self-efficacy mediate the relationship between peer mentorship and writing performance?” The literature on self-efficacy, writing, and peer mentorship supports my hypothesis that self-efficacy makes an independent contribution to students’ levels of writing achievement (Pajares, 2003; Zimmerman & Bandura, 1994). Pajares (2003) moves on to suggest that accounting for self-efficacy is highly potent, even when powerful past performance covariates such as HS GPA and ACT scores are included in the statistical model. As a result, Research Question 3 sought to use the measures of writing performance and self-efficacy to collect comprehensive data and test whether the treatment (peer mentorship) has an indirect effect on student’s writing achievement via self-efficacy as a mediating variable (see Figure 6).

![Diagram](image)

*Figure 6. Exploratory Mediation Analysis of Self-Efficacy, Peer Mentorship, and Writing Performance.*

This analysis revealed that the approximation of the direct and indirect effects analyzed using the Sobel test \( c \approx c' + ab \) disproved the hypothesis that self-efficacy was
a mediating factor in understanding the relationship between peer mentorship and writing performance. In other words, the odds for students who received the treatment, were less likely to perform proficiently on measures of posttest writing performance and were also less likely to score higher than the control group on measures of self-efficacy. Possible explanations include higher self-efficacy scores exhibited by the control group than that of the treatment group at the start of the writing peer mentor program (see Table 5), lack of data on the fidelity of implementation of the writing peer mentor program, or project design was simply ineffective.

**Examining URM Status**

Conceptually understanding the importance of predicting patterns for students who identify as an URM is critically important to the body of literature on developmental education (Greenfield & Rowan, 2011, Pajares, 2003; Reid & Moore, 2008; Strayhorn, 2011). For this reason, URM status was evaluated on three occasions within this study:

1. Examine the relationship between peer mentorship and writing performance and observe the dependency of these two variables on URM status.

2. Examine the relationship between peer mentorship status and self-efficacy and observe the dependency of these two variables on URM status.

3. Examine the interaction between URM status and writing performance and observe the dependency of these two variables on student’s levels of self-efficacy.

In all cases, URM status was not a statistically significant moderator of other observed relationships. While peer mentors within this study shared similar academic and social backgrounds to the URM students, it is important to note that the mentor group was not
racial and ethnically diverse. Literature on URM students and writing provide guidance for supporting students from diverse racial and ethnic backgrounds. These suggestions include but are not limited to providing opportunities for students to interact with other URM students (St. John, Hu, & Fisher, 2011). Within this study, writing peer mentors were recommended by the writing project faculty. This feature of the program may have limited the pool of candidates. Future studies should consider broader advertisement while recruiting for peer mentors and provide some degree of intentionality in connecting with URM student groups within these recruitment efforts (Tinto, 2012).

**A Critique of the Theoretical and Conceptual Frameworks**

The theoretical and conceptual frameworks used to guide this study are Social Learning Theory (Bandura, 1986), Academic Capital Formation (St. John, Hu, & Fisher, 2011), and “The Framework” for Success in Post-Secondary Writing (CWPA, NCTE, & NWP, 2011). While the three aforementioned frameworks were instrumental in building the foundational tenants of this study, their operationalized components were less effective in supporting this study’s results and subsequent conclusion.

The writing peer mentor program was designed with the following three guiding components of the theoretical and conceptual frameworks in mind; 1) The Framework’s perspective on peer mentorship as a mechanism for transmitting critical habits of mind needed for college success; 2) Academic Capital Formation’s perspective on mentorship as a mechanism for forming the social and cultural capital needed to develop advocacy skills; and 3) Social Learning Theory’s perspective on modeled events as a characteristic of ability transfer. According the literature on self-efficacy, these three guiding components are critically important to the development of self-efficacy, and thus
important to the implementation of the writing intervention (Bandura, 1986; CWPA, NCTE, & NWP, 2011; St. John, Hu, & Fisher, 2011).

The Framework describes the rhetorical and 21st century skills as well as habits of mind and experiences that are critical for college success (CWPA, NCTE, & NWP, 2011). It is important to note that developing peer relationships takes time, a luxury not afforded within the context of a 15-week college course (CWPA, NCTE, & NWP, 2011). Writing growth is said to be an iterative process and should be examined over time and in a variety of different situations. In-class writing initiatives can help students become better writers by developing structured experiences whereby students have the opportunity to generate ideas, situate those ideas within different academic contexts, develop evidence and ideas from a mired of different medians, and use peer feedback to revise text for the appropriate academic context (CWPA, NCTE, & NWP, 2011). In the absence of observations or surveys designed to collect information about implementation, as well as a sample size large enough to control for variation in approach, it is difficult to monitor and quantify the application of the treatment (peer mentor program). At Level 2, the instructor level, the small sample size \((n = 12)\) required a very conservative approach to the inclusion of variables. For this reason, there is very little evidence that confirms or contradicts the fidelity of implementation of the writing peer mentor program examined for this study.

Considering the lack of variable inclusion at Level 2, it is difficult to determine if the application of Academic Capital Formation and its perspective on transferring elements of cultural and academic capital were realized. Since embodied cultural capital is obtained through intentional interactions, it is assumed that peer mentors were
provided space and opportunity to interact with their mentees in intentional ways. This assumption is problematic in the absence of evidence. The inclusion of observations and/or a survey tool that monitors the instructors’ and mentors’ intentionality with the utilization of peer mentors may provide insight into the degree to which ability transfer and advocacy skills are transmitted through the interactions with peer mentors (St. John, Hu, & Fisher, 2011).

Social Learning Theory emphasizes the importance of observing and modeling behaviors and attitudes. Unlike the other complementary frameworks, Social Learning Theory draws attention to the emotional reactions of others (Bandura, 1986). This component of observational learning is critical for developing writers, as receiving corrections and having the appropriate emotional response is important to writing growth (CWPA, NCTE, & NWP, 2011). This modeled behavior is adapted through observation, reinforcement, symbolic interactions, cognitive rehearsal, and self-observation, all of which are best monitored and transferred through peer-to-peer interactions (Bandura, 1986). It is during this process that students develop an internal locus of control that is quantifiable and predictive of academic performance (Bandura, 1986). Since observation was not a part of this study’s design, it is difficult to determine if the main components of the Social Learning Theory were applied. Careful attention to this matter moves toward implications for educational leaders, researchers, and policy makers.

Implications for Educational Leaders, Researchers, and Policy Makers

While attending a bachelor’s degree granting institution may not be for all students, it is assumed that those who have the desire to attend should be prepared through their K-12 education. For decades, a college education has been imperative to
obtaining a middle-class lifestyle. Today’s labor market demands a college education from a growing number of career fields, and many skill-level jobs that would allow families to support themselves without a college education are either scarce or disappearing (Conley, 2011). The above-mentioned economic changes were immense and affected more than those observed on the surface. The trickle-down effects left many people unemployed or underemployed, but more importantly eliminated the non-college educated middle-class national workforce, as it was once known (U.S. Bureau of Labor, 2013). For this reason, there is a great need to give attention to affording all students who desire to attend college the opportunity to acquire the skills, both academic and otherwise, to be successful in their transition into higher education.

While the terms underrepresented minority, first generation student status, and educational under-preparedness should not be used interchangeably, many circumstances have led to the confounding of these groups (Checchi, 2006). Often, students who come from families with liquidity constraints have also had substandard educational preparation throughout their K-12 experience. In many cases, these circumstances signal toward lower income neighborhood conditions, high degrees of minority representation, and/or a lack of college going behavior as a model (Checchi, 2006). Since the meritocratic undertones of American social mobility are in many ways predictive of the economic trajectory of American citizens (Checchi, 2006), the need to provide guidance for systematic implementation of writing programs that support students with developmental academic needs is immense. In the absence of systematic initiatives, many college-matriculating lower income, first generation, and/or URM students stumble upon college campuses in need of academic remediation—particularly in writing (CHDE,
Several state and federal programs have been developed to help transition students into their first year of college. Many of these programs focus on demystifying the college experience as well as gradually developing the student’s level of competence and independence as learners. While many of these efforts are effective, much of the research completed neglects to focus on early in-class writing interventions for transitioning college writers with developmental needs. This study was intentionally designed to provide insight for educational leaders, researchers, and policy makers about the operational efforts and subsequent analysis that may be useful in understanding the relationship between peer mentorship and developmental writing.

**Implications for Educational Leaders**

The background of this study provided much information about many efforts, as well as specific initiatives, targeted at helping students transition into higher education. While on campus writing centers offer robust efforts and provide a first-look model for supporting students throughout their collegiate writing process, more purposeful support mechanism must be built into first year writing courses to offset the magnitude of the challenges experienced by students with developmental writing needs. Examining and implementing models for in-class peer mentorship will potentially create a body of work that will provide educational leaders with resources and models to create spaces whereby students feel more connected to the collegiate support available on campus, and thereby are more likely to take advantage of writing centers as a resource. Allowing students to work with their peers in support roles helps to demystify the experience of the writing
center, consequently encouraging greater and more frequent use of the space (Greenfield & Rowan, 2011).

In addition to mobilizing the efforts of the writing center, educational leaders would benefit from giving additional attention to the ways in which in-class peer mentorship models are implemented and examined for fidelity of their operationalized goals. While this study’s results are null, indicating that the treatment (peer mentorship) did not prove to be particularly useful in supporting writing growth or the development of self-efficacy, the findings point toward valuable implications for educational leaders, as there was no data collected to confirm or contradict the fidelity of implementation of the writing interventions used for this study. Educational researchers should consider the importance of observations and a formalized feedback loop for the involved faculty as well as peer mentors. While this study allowed for several opportunities for the writing project faculty and peer mentors to connect related to course content and daily lesson planning, more bi-lateral communication across the various sections of ENGL 100 and regular communication with program administrators would have helped to ensure parallel implementation across sections.

**Implications for Educational Policy Makers**

From a policy perspective, an important question to consider is: *Should the current mainstream model for developmental education include the use of in-class writing mentors, particularly mentors that can relate to the experiences of the students with whom they mentor?* Given the vast research on the effectiveness of positive peer mentorship, it is possible that with monitored execution, the presence of writing mentors could greatly contribute to students sense of belonging in their academic environments,
facilitating ease of transition from one semester to the next (Agee & Hodges, 2012; Badger, 2010; Corroy, 2003; Plymouth State University, 2011; Regaignon & Bromley, 2011; Tinto, 1998, 2002, 2012; Zawacki, 2008). While the focus of the policy on college access in the state of Colorado is designed to boost enrollment and provide writing spaces and English departments with the flexibility to modify their course pedagogy to support students with greater need for development, language that encourages consideration for the concept of writing self-efficacy or peer mentorship should also be considered.

**Implications for Educational Research**

Despite the abundance of literature that recommends peer mentorship as an impetus for increasing student’s levels of self-efficacy and subsequent academic performance (Agee & Hodges, 2012; Bandura, 1997; Tinto, 2012), Research Question 3a’s *(To what extent does student levels of self-efficacy mediate the relationship between peer mentorship membership and writing performance?)* non-significant results from the analysis do not support the hypothesis that self-efficacy mediates the relationship between peer mentorship and writing performance. This contrary finding provides an opportunity to consider this study’s implementation with a larger group of students with more differentiation between instructors; b) a larger group of faculty represented at Level 2; c) more rigorous training for both the instructors and the writing mentors; and d) a two-semester intervention that would help facilitate a more organic formation of student-peer relationships, giving particular attention to the racial/ethnic homogeneity of mentor/mentee relationships.

It is important to note that Bandura (1986, 1995) reminds educational researchers of the bi-directional nature of self-efficacy and cautions against examining self-efficacy
at only two points in time (beginning and end of an intervention). Educational researchers should consider a mid-point measurement of the outcome variable—in this case, writing performance—to more accurately observe students’ performance trajectory. Observations of self-efficacy could also be observed post intervention to detect degrees of self-efficacy in other educational settings.

Future studies on peer mentorship in the context of developmental writing courses could also benefit from measuring and monitoring growth patterns along a student’s development of locus of control. Zimmerman (2002) provides a powerful instrument designed to capture growth across the primary domains of the internal locus of control model. As modeled in Appendix E, peer mentors should be trained to accurately recognize when a student’s thinking about their internal dialogue is counterproductive and be equipped with language to interrupt the metacognitive cycle by drawing the student closer toward a forward-thinking pattern (Bandura, 1997).

Despite the non-significant results on the odds of posttest writing performance, the results of this study did, however, indicate that students who worked with a writing peer mentor were more likely to reenroll in the follow-on developmental English course. While this finding is not directly related to the research questions, the persistence rates of students who enroll in developmental courses is of great concern to scholars who study student dropout behavior and is also of great interest to colleges and universities across the nation (Bandura, 1997; Tinto, 2012). Table 14 displays the mean difference in Spring enrollment into ENGL 105, the follow-on English course.
Table 14

Mean Differences for Spring Enrollment (ENGL 105—Part B of Stretch Sequence)

<table>
<thead>
<tr>
<th></th>
<th>Control Group</th>
<th>Treatment Group</th>
<th>Estimated Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n = 38$</td>
<td>$n = 88$</td>
<td></td>
</tr>
<tr>
<td>% Matriculated</td>
<td>73.7 %</td>
<td>84.1%</td>
<td>10.4%</td>
</tr>
<tr>
<td>% Difference</td>
<td></td>
<td></td>
<td>0.35</td>
</tr>
</tbody>
</table>

Nationally, persistence rates are low (~ 58%) for students enrolled in developmental education courses (CDHE, 2015). For this reason, it is important to note that students in the treatment group enrolled at higher rates than those in the control group, displaying a 10.4% difference in Spring semester enrollment. The data presented above provides varying degrees of insight around the effectiveness of peer mentorship within the context of developmental education English courses. Understanding the mechanics of implementing a sustainable model for writing peer mentorship is critically important in increasing student persistence and closing the opportunity gap in educational interventions (Tinto, 2012).

Concluding Summary

The purpose of this study was to investigate the relationship between peer mentorship, writing self-efficacy, and writing achievement. The background research and concluding results have been crafted to encourage a critical look at the use of in-class academic writing mentors as an impetus for bolstering student levels of self-efficacy, and by proxy stronger connections to campus and greater strides in achievement (Crisp & Cruz, 2009). In many cases, peer mentors are housed within campus writing centers, and while Al Chibani (2014) and Turner (2016) confirm the effectiveness of writing centers
in supporting students’ development of the writing process, they are rarely
demographically reflective of the population of students that occupy most developmental
courses (Villanueva, 2006). One cited consequence of the lack of diversity represented in
some writing centers is that many students with developmental writing needs, who are
also a part of the URM student population, do not take advantage of the writing services
available on many college campuses (Greenfield & Rowan, 2011). Campus leaders must
make intentional efforts to connect with URM student groups to encourage their interest
and further desire to attend, support, and staff campus writing centers. This is one
possible solution to encourage greater minority participation in campus writing support
efforts.

An additional suggestion follows the logic of this study, that is, to mobilize
writing center support efforts into first year developmental writing courses. While there
are a number of state and national policy initiatives attempting to address the
matriculation problems present within developmental education courses, it is highly
conceivable that in the interim, many students are inversely postured to utilize campus
writing centers. Intentional efforts to bring the services and support offered by writing
centers to first year developmental writing courses helps to close the equity gap
unintendendly present for students who lack the academic and social capital needed to
successfully matriculate through their first year of college writing.

The findings from this study are important to the field of higher education access,
as the established body of literature on writing-specific college transition initiatives
primarily focuses on site-based writing support—such as writing centers—and does not
include substantive direction on the use of in-class writing peer mentorship. The
background literature, operational tenants of establishing and analyzing a model for writing support within a mainstreamed-model of writing remediation, and the concluding suggestions for educational leaders, researchers, and policy makers provide grounds for preliminary coverage of a gap in the literature on writing peer mentorship and developmental education.
REFERENCES


APPENDIX A

CDHE Placement Guide and Course Path Options

APPENDIX B

Description of Three Universities in Colorado

University A. Situated at the foothills of the Rocky Mountains, this campus serves approximately 12,000 students and is one of the fastest growing of its kind. With expansions in every area from fine arts to medicine, this institution offers graduate, undergraduate, and online education. Beyond its academic rigor and research agenda, this institution’s foundation has fabric threads colored with a commitment to growing the human capital within the state—and, much of the staff on campus support this mission. For this reason, this institution has become well known for its innovation in student support services, as well as its commitment to the military community. With more than 15 percent—in comparison to the 32 percent statewide—of its incoming freshman class during the 2016/17 academic year requiring writing remediation, this institution has adopted a remediation model around writing that allows students to “mainstream” into the Composition I course in their first semester. This model takes the course material and stretches its contents over two semesters, providing students with more time to absorb the intent and purpose of the course, as well as to better understand themselves as writers. This creative approach to developmental education illustrates the operational nature of SAI at a four-year institution within the state Colorado. Placement into this course is determined by college readiness examination scores that are slightly above the states recommended benchmarks for college readiness (ACT ENG score < 19 and SAT verbal score < 460).

Employing the use of SAI, faculty in the English department have led an effort to work with students on several syntax and grammatical issues in their writing outside of class time. These writing labs are held throughout the semester, in the writing center, and provide all students with an additional opportunity to strengthen their understanding of the rhetorical process, while simultaneously connecting with faculty who are committed to student success—both well advised methods to build efficacious academic behavior.

University B. Situated in the heart of a metropolitan city, this four-year institution serves nearly 20,000 students, and is committed to student success. From athletics to fine arts, students who chose to attend this institution are met with a well-rounded education that allows them to experience the culture and urban flare of an urban environment. The unique urban atmosphere, coupled with the affordable tuition cost, attracts many out-of-state students interested in urban life in the state of Colorado. With a large majority of its students classified as returning students [over the age of 25], this institution has altered its admissions procedures to allow adult learners a more streamlined path to four-year degree completion.

The admission standards at this institution are flexible for returning students, with an open admittance policy, but more aligned with state mandates for traditionally aged students (Accuplacer Sentence Skills < 95, ACT ENG score < 19, and SAT verbal score < 440). With greater than 30 percent of the students at this institution beginning their institutional coursework in need of writing remediation, the English faculty have committed to proper course placement through hand scoring and interview procedures. This ensures that students are placed with the appropriate faculty and in classroom spaces
that help meet the needs of their entire student population, including their URM population, that make up nearly 50 percent of the student body.

This campus also takes a mainstreaming model to introducing first year composition to students with developmental writing needs. This task is accomplished through a year-long extended version of Composition I, enabling students to choose co-requisite options, based on individual needs. The co-requisite options are one or two-hour labs that provide supplemental academic instruction for international students or students that completed their high school education outside of the United States. This course emphasizes the relationship of reading and grammar to writing. The SAI options are also open to other students within the extended writing courses who desire to spend additional time improving their writing skills. In addition, faculty and student employees support the use of traveling writing centers throughout the campus.

University C. From community outreach to the pursuit of excellence in athletics, this Hispanic serving institution serves nearly 10,000 students annually and is well known for its variety in course offerings that are available to working adults and military personnel. Priding itself as the most diverse four-year institution in the state, nearly 50 percent of the student population identifies as a minority. Offering small class sizes with less than 25 students per class on average, this campus has become a point of attraction for students who wish to be both academically as well as socially prepared to thrive in today’s global workforce. With more than 30 percent of the student population identified as English language learners, this campus has rolled up its sleeves to help fully develop its student population to take their place in a growing economy.

For greater than a decade, more than 30 percent of its incoming freshman class has required some form of writing remediation. For this reason, this institution utilizes a developmental English course that prepares students to complete their first year Composition I course. Placement into this course is determined by college readiness examination scores that mostly parallel the expectations across the state (ACT ENG score < 17 and SAT verbal score < 440). While placement into the developmental course option does not count toward graduation, this model provides an entire semester to develop a more contextualized understanding of college writing.

In addition to the developmental course offering, students may also make use of the campus writing center. The center is designed to provide ongoing support and mentorship through peer led activities. Peer writers are available to work through both structure and organizational issues, as well as talk through challenges students may be facing as they develop confidence in their writing abilities. The center is open six days a week providing support for both traditional and non-traditional students.
APPENDIX C

Implementation of Intervention

Bandura (2006) and Vygotsky’s (1978) ideas were carried forward in multiple discussions with the English Department Chair, Director of First Year Writing, Director of the Writing Center, and the Vice Chancellor for Student Retention.

- After receiving campus support, a deeper discussion centered on understanding the transitory needs of the students who place into ENGL 100/105 (stretch writing program), and the pedagogical desires of the stretch instructional team were discussed. The intervention design discussions occurred over the course of one year, and according to Goodson, Wolf, Gan, Price, and Boulay (2016) produced the following observables and deliverables:
  - Detailed instructional procedures where shared with the peer writing mentors each week. These discussions helped the mentors understand the focus and approach for each class throughout the semester.
  - Instructor actions and language toward the mentors throughout the semester was designed to model a feedback loop intended to provide an equal degree of challenge and support. This transfer of modeling created a space for mentors to feel empowered to support their mentees.
  - Instructors and mentors connected prior to the start of class to discuss the use of instructional materials. It was important that the mentors had a solid pulse on all activities planned for each day. Mentors were also given all course materials at the beginning of the semester and were expected to come to class prepared to support the learning of their peers.

As suggested by Agee and Hodges (2012), the operational nature of this intervention’s primarily focus was to use writing mentors to:

- Reinforce community building by making intentional connections with students outside of class time, on campus, and in a space that reflected a help-seeking environment. Mentors were also encouraged to be transparent about some of their struggles and the resources that were drawn upon to overcome their challenges during the course. This activity was coordinated throughout the semester.
- Facilitate metacognition in writing by reinforcing the importance of the writing process by reviewing the different approaches to the writing processes, then asking their mentees to map their own writing process. The goal of this activity was to give students an awareness of their own process in the hopes that visualizing the process will offer insight into where challenges exist, and where they excel. This activity was coordinated in class at the beginning of the semester.
- Help students understand the assignment sheet: This activity was designed to take the guesswork out of completing an assignment. During this one-on-one interaction, writing mentors provided examples from previous ENGL 100A classes to determine an assignment’s intended style, audience, purpose, and context. Writing mentors are also trained to coach toward tactful ways to communicate with university instructors, including types of questions to ask and when they should be asked. This activity was coordinated throughout the semester.
- Help students understand the peer review process, by outlining strategies for students to offer one another generative criticism on works-in-progress, both one-on-one and in small groups. First, mentors describe and define peer response. Then, students break into groups and spend the majority of this workshop offering peer response feedback to classmates. Presenters listen in on these conversations and offer feedback when necessary.

- Encourage students to be resourceful: Mentors were trained to encourage their mentees to be tenacious in seeking information, strategies, and resources toward attaining their educational goals. This includes intentional help seeking behaviors such as meeting with faculty members, visiting the on-campus writing center, and independently organized peer review sessions.

- Reinforce and support proofreading efforts: This effort allows students to learn strategies for planning and executing a proofread of their final paper.

- Remind students of the importance of self-awareness: Mentors serve as a conduit for encouraging students to be self-reflective and honest about their assessment of themselves as students. Mentors are instructed to encourage their mentees to monitor areas of difficulty and task avoidance and break problems down into manageable tasks.
APPENDIX D

Writing Peer Mentor Program

Purpose of Study and Project Description (Pre-Collegiate Director)
- Research project overview
- Informed consent
- Observations/Journals/Debriefs
- Incentives (End of term pizza party)

The Role of a Mentor (Pre-Collegiate Director)
- Shift from student to mentor (discuss relationship boundaries with peer mentees)
- Leading by example
- How college students develop
- Mandatory reporting
- Connecting with difficult students

Supporting Diverse Student Populations (English Faculty)
- Special considerations for ELL
- What does it mean to be a military friendly campus?
- Implicit bias, inclusivity, micro-aggression, stereotype threat

Collaborative Learning Strategies (Language Center)
- Difference between a TA and an in-class mentor
- Core values of iLead (Leading self, leading others, leading for change)
- Strategies for modeling academic engagement
- Collaborative Learning Techniques
  - Think, pair, share
  - 3, 2, 1

Preparing for and Reflecting After Class (English Faculty)
- Course overview and course goals
- Sample papers and what to look for
- Familiarization with course topics
- Meeting with course instructor once per unit

Combining Mentorship with Writing Support (Writing Center)
- Current peer mentorship pedagogy (Review assigned reading)
- Supporting peer review
- Reader-based feedback
- Providing quality constructive feedback
Writing and the First year Experience  
(Mentor Copy—Day 1)

**Breakfast Meet and Greet**  
(Meet the faculty)  
9:00 AM – 9:15 AM

**Welcome, Introduction, Project Description**  
(Research overview, informed consent, class observations)  
9:15 AM – 9:45 AM  
Director | Pre-Collegiate

**What is a Mentor?**  
(Student as leader, college student development theory)  
9:45 AM – 10:15 AM  
Director | Pre-Collegiate

**Combining Mentorship with Writing Support**  
(Defining writing mentorship, reader-based feedback, guiding peer review)  
10:15 AM – 12:15 PM  
Director | Writing Center

**Lunch**  
12:30 PM – 1:00 PM

**Collaborative Learning Strategies**  
(TA/mentor, core values of leadership, academic engagement)  
1:00 PM – 5:00 PM  
Director | Language and Social Sciences Center
Writing and the First year Experience
(Mentor Copy—Day 2)

**Breakfast and Debrief**
9:00 AM – 9:15 AM

**Preparing for Class**
(Course overview and goals, one-on-ones with course instructor)
9:15 AM – 10:15 AM
Faculty Member | English Department

**Supporting Diverse Students**
10:15 AM – 12:15 PM
Faculty Member | English Department
## Writing Peer Mentor Schedule

<table>
<thead>
<tr>
<th>Time/AM</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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</table>

**Note:**
- Office: Meeting in the writing office.
- Writing: Writing in the writing lab.
APPENDIX E

Cycle of Metacognitive Support
**APPENDIX F**

**Self-Efficacy Rate Scales**

**Perceived Writing Self-Efficacy Beliefs Rate Scale**

*Directions: On a scale from 0 (no chance) to 100 (completely certain), please rate how sure you are that you can perform each of the writing skills described below by writing the appropriate number. Of course, there are no right or wrong answers, so do not spend too much time on any one statement. Thank you for your cooperation. Your answers will be kept strictly confidential, and you will not be identified by name.*

<table>
<thead>
<tr>
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<th>90</th>
<th>100</th>
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<tbody>
<tr>
<td>cannot do at all</td>
<td>moderately can do</td>
<td>completely certain I can do</td>
<td></td>
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</tbody>
</table>

1. I can write a fluent paragraph.
2. I can write a fluent essay.
3. I can correctly spell all words in an essay.
4. I can correctly punctuate an essay.
5. I can correctly use all parts of speech in an essay.
6. I can write simple sentences with good grammar.
7. I can correctly use singulars and plurals and prepositions.
8. I can correctly use conjunctions and transitions.
9. I can use a wide range of vocabulary in essays.
10. I can use synonyms instead of repeating the same words over and over again.
11. I can easily generate ideas to write about.
12. I can write a strong paragraph that has a good topic sentence or main idea.
13. I can write paragraphs with details that support the ideas in the topic sentences or main ideas.
14. I can write a proper introduction.
15. I can write a proper conclusion.
16. I can edit essays throughout the writing process.
17. I can write a well-organized and sequenced paper with good introduction, body, and conclusion.
18. I can write on an assigned topic without difficulty.
19. I can get ideas across in a clear manner by staying focused without getting off the topic.
20. I can complete a writing task without difficulty by the due date.
Self-Regulatory Learning Strategies for Writing Rate Scale

Directions: *On a scale from 0 (never) to 100 (always), please rate how sure you are that you can perform each of the writing skills described below by writing the appropriate number. Of course, there are no right or wrong answers to such questions, so do not spend too much time on any one statement. Thank you for your cooperation. Your answers will be kept strictly confidential, and you will not be identified by name.*

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<tr>
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<td>rarely/seldom</td>
<td>sometimes/occasionally</td>
<td>often/usually</td>
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</tbody>
</table>

1. I brainstorm for ideas before I write.  
2. I use graphic organizers to organize my ideas.  
3. I free-write to get out my thoughts.  
4. I create an outline before I write.  
5. I create a draft before writing the final paper.  
6. I revise my paper if I’m not content with it.  
7. I proofread my work.  
8. I ask my peers to edit my writing.  
9. I ask tutors to evaluate my writing and give suggested revision.  
10. I reread my work several times to find errors in my writing.
Self-Evaluation for Writing Rate Scale

Directions: On a scale from 0 (never) to 100 (always), please rate how sure you are that you can perform each of the writing skills described below by writing the appropriate number. Of course, there are no right or wrong answers to such questions, so do not spend too much time on any one statement. Thank you for your cooperation. Your answers will be kept strictly confidential, and you will not be identified by name.

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<td>sometimes/occasionally</td>
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</tbody>
</table>

1. If the drafts of my writing assignments are not getting good feedback or grades, I ask my instructor for help.
2. I make necessary revisions in my compositions whenever the instructor suggests me to.
3. I edit errors in my compositions before I submit them to the instructor.
4. I enjoy writing workshops because I am given ideas, so I may improve.
5. I write down the comments of everyone who reads my writing.
6. I browse through my drafts to check the progress of my writing.
7. I am open to feedback which can help improve my compositions.
8. I cross check if my writing progress matches the outline I created.
9. I ask others what changes should be done in my composition for further improvements.
10. I create my own rubric to check my own writing quality.
## APPENDIX G

### Course Outlines for First Year Writing Course

**ENGL 100 Course Outline**

<table>
<thead>
<tr>
<th>Date</th>
<th>Class Agenda</th>
<th>Work Due</th>
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<tbody>
<tr>
<td>9/1</td>
<td>How we read/ Discuss readings Intro U1 assignment</td>
<td>RW: Ch 1: Critical Reading</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LA: Alexie</td>
</tr>
<tr>
<td>9/3</td>
<td>Discuss reading</td>
<td>RW: Ch3: Writing Process 5 Narrative ideas</td>
</tr>
<tr>
<td></td>
<td>Partner interviews Drafting time</td>
<td></td>
</tr>
<tr>
<td>9/8</td>
<td>No class—Labor Day</td>
<td>No class—Labor Day</td>
</tr>
<tr>
<td>9/10</td>
<td>Discuss reading</td>
<td>LA: Angelou</td>
</tr>
<tr>
<td></td>
<td>Hallmarks of effective narratives</td>
<td>Talking points</td>
</tr>
<tr>
<td>9/15</td>
<td>Writing Workshop</td>
<td>Rough draft of U1 Narrative Workshop reflection (during class)</td>
</tr>
<tr>
<td></td>
<td>Reflection on feedback</td>
<td></td>
</tr>
<tr>
<td>9/17</td>
<td>Peer reading groups &amp; Drafting time</td>
<td>Revised draft of U1 Narrative</td>
</tr>
<tr>
<td>9/22</td>
<td>Mini-conferences &amp; Intro U2</td>
<td>In process draft Conference questions</td>
</tr>
<tr>
<td>9/24</td>
<td>Intro U2 + MLA overview</td>
<td>RW: Ch 2 &amp; Ch 6</td>
</tr>
<tr>
<td></td>
<td>Define summary, paraphrase, &amp; response</td>
<td>Lyrics to your favorite song*</td>
</tr>
<tr>
<td>9/29</td>
<td>Learning summary w/ cartoons &amp; texts</td>
<td>LA: Lamott w/choice critical reading strategy*</td>
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<tr>
<td>10/1</td>
<td>Learning paraphrase w/ LEGO &amp; texts</td>
<td>LA: Bartholomae w/ critical reading strategy*</td>
</tr>
<tr>
<td>10/6</td>
<td>Learning academic response w/ texts</td>
<td>LA: Davis w/choice critical reading strategy*</td>
</tr>
<tr>
<td>10/8</td>
<td>Large group practice assignment</td>
<td>LA: Truth</td>
</tr>
<tr>
<td>10/13</td>
<td>Small group text discussions</td>
<td>LA: Rodriguez &amp;Talking points*</td>
</tr>
<tr>
<td>10/15</td>
<td>Small group practice assignments</td>
<td>1st attempt at U2 Summary*</td>
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<tr>
<td>10/20</td>
<td>Work day w/ Mini-conferences</td>
<td>Conference prep &amp; questions*</td>
</tr>
<tr>
<td>10/22</td>
<td>No class</td>
<td></td>
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<tr>
<td>10/26</td>
<td>Peer review</td>
<td>Rough draft of U2 paper*</td>
</tr>
<tr>
<td>10/29</td>
<td>Check-ins</td>
<td></td>
</tr>
<tr>
<td>11/3</td>
<td>Mid-semester reflection &amp; goal setting Intro U3 &amp; discuss assigned readings</td>
<td>CP: Ch 7/ Praxis: pg 33-40, 47-49, 56-61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LA: Bush</td>
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</table>

**CP**: Ch 7/ *Praxis*: pg 33-40, 47-49, 56-61

**LA**: Bush
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<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Notes</th>
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<tr>
<td>11/5</td>
<td>Discuss organizational strategies for U3</td>
<td>CP: Ch 4—Organization</td>
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<td>Large group paper collaboration</td>
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<td>11/10</td>
<td>Small group text discussions</td>
<td>U3 choice text (see assignment for list)</td>
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<td>Pre-writing work time</td>
<td>Talking points</td>
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<tr>
<td>11/12</td>
<td>Writing effective introductions</td>
<td>Praxis: pg 145-152</td>
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<tr>
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<td>Thesis workshop</td>
<td>Draft: intro + thesis</td>
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<td>11/17</td>
<td>Drafting day</td>
<td>3 questions</td>
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<td>Small-group check-ins</td>
<td>Revised thesis</td>
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<tr>
<td>11/19</td>
<td>Thread of the paper: topic sentences &amp; conclusions</td>
<td>Praxis: pg 157-158</td>
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<td>Organization workshop</td>
<td>Cards</td>
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<td>11/24</td>
<td>Optional individual check-ins</td>
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<td>11/26</td>
<td>No class-Thanksgiving</td>
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<td>12/1</td>
<td>Peer review</td>
<td>3 printed copies of full draft</td>
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<td>CP: Ch 5—Grammar &amp; Punctuation</td>
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<td>3 printed copies of full U3 draft</td>
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<td>12/8</td>
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<td>12/10</td>
<td>Semester wrap-up and celebration</td>
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<tr>
<td>Date</td>
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| 1/20 | Introductions  
Looking backward & forward  
The house | Praxis Ch 5  
Course pack Ch 8  
Initial writing assignment |
| 1/25 | Introduction to Rhetorical Analysis  
What is it? How do you do it?  
Practice analysis | Language Acts: Clinton  
Course pack: Ch 9  
Identify ethical appeals in Clinton  
Praxis Ch 5  
Course pack Ch 8  
Initial writing assignment |
| 1/27 | Thinking deeply about ethos  
What is ethos? What does it look like?  
Ethos activity & practice | Course pack: Ch 10  
Identify logical appeals in Clinton  
Language Acts: Clinton  
Course pack: Ch 9  
Identify ethical appeals in Clinton |
| 2/1 | Snow Day | Schedule below reflects changes |
| 2/3 | Thinking deeply about logos  
What is logos? What does it look like?  
Logos activity & practice | Language Acts: U1 choice text  
Intro & outline  
Course pack: Ch 10  
Identify logical appeals in Clinton |
| 2/8 | U1 Pre-writing  
Small group work  
Introduce evidence charts | Questions  
In-process evidence chart  
Language Acts: U1 choice text  
Intro & outline |
| 2/10 | Drafting & Feedback  
Evidence chart check-ins  
Drafting time | Questions  
In-process evidence chart  
Questions  
In-process evidence chart |
| 2/15 | Drafting & Feedback  
Evidence chart check-ins  
Drafting time | 3 printed copies of your full rough draft  
Questions  
In-process evidence chart |
| 2/17 | Peer Review | In-process draft & questions  
3 printed copies of your full rough draft |
| 2/22 | Work time | TBD  
In-process draft & questions |
| 2/24 | Intro U2  
Discuss pathos & activity | LA: Hirschberg/ Praxis: 27-28; 59-66  
Bring in an advertisement  
Course pack: Ch 11 |
| 2/29 | Free writing  
Discuss visual rhetoric  
TedX: Kilbourne | LA: Kilbourne  
Bring in 2 advertisements  
LA: Hirschberg Praxis: 27-28; 59-66 Advertisement |
| 3/2 | Discuss Kilbourne  
Group work | LA: Lutz  
Select top 3 advertisements for paper  
LA: Kilbourne Advertisements |
| 3/7 | Discuss Lutz  
Speed dating  
Large group practice | Intro + thesis  
Lutz 3 advertisements |
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity 1</th>
<th>Activity 2</th>
<th>Activity 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/9</td>
<td>Group planning &amp; practice</td>
<td>Prewriting</td>
<td>Intro + thesis</td>
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<tr>
<td>3/14</td>
<td>Workshop Check-ins</td>
<td></td>
<td>Pre-writing/ drafting</td>
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<tr>
<td>3/16</td>
<td>Supported work time Check-ins</td>
<td>Full draft for peer review</td>
<td>Pre-writing/ drafting</td>
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<td></td>
<td>No class—Spring break</td>
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<tr>
<td>3/28</td>
<td>Peer review</td>
<td></td>
<td>3 printed copies for peer review</td>
</tr>
<tr>
<td>3/30</td>
<td>Drafting time</td>
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<td></td>
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<tr>
<td>4/4</td>
<td>Mid semester reflection U3 Intro Discuss text 1</td>
<td>Text 2</td>
<td>Text 1 annotations Mid-semester reflection (in class)</td>
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<tr>
<td>4/6</td>
<td>TED Discuss text 2</td>
<td>Look for U3 text for analysis</td>
<td>Text 2 annotations</td>
</tr>
<tr>
<td>4/11</td>
<td>Appeals in political rhetoric Collaborative U3 planning</td>
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<td>Exit slip</td>
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<tr>
<td>4/13</td>
<td>Collaborative paper writing</td>
<td>U3 Pre-writing</td>
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<tr>
<td>4/18</td>
<td>Check-ins</td>
<td>In process intro &amp; thesis</td>
<td>Pre-writing</td>
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<tr>
<td>4/20</td>
<td>Intro &amp; thesis workshop</td>
<td>Full draft for peer review</td>
<td>In process intro &amp; thesis</td>
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<tr>
<td>4/25</td>
<td>Peer review</td>
<td>Revised draft for proofreading workshop</td>
<td>Full draft</td>
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<tr>
<td>4/27</td>
<td>Editing workshop</td>
<td>Reflective writing</td>
<td>Revised draft</td>
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<td>5/2</td>
<td>Supported drafting time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/4</td>
<td>Exit activities</td>
<td></td>
<td>Reflective writing</td>
</tr>
</tbody>
</table>
APPENDIX H

IRB Approval Letter

University of Colorado
Colorado Springs
Institutional Review Board (IRB) for the Protection of Human Subjects

Date: 7/24/2017

IRB Review

APPROVED

IRB PROTOCOL NO.: 18-003
Protocol Title: Self-Efficacy and Writing: A Closer Look at Peer Mentorship in First-Year Writing Courses
Principal Investigator: Teraine Brown
Faculty Advisor if Applicable: Sylvia Mendez
Application: New Application
Type of Review: Expedited Category 7
Risk Level: No more than Minimal Risk
Renewal Review Level (if changed from original approval) if Applicable: N/A No Change
This Protocol involves a Vulnerable Population: N/A (No Vulnerable Population)
Expires: 23 Jul 2018
Note, if exempt: If there are no major changes in the research, protocol does not require review on a continuing basis by the IRB. In addition, the protocol may match more than one review category not listed.
Externally funded: ☒No ☐Yes
OSP #: Sponsor:

Thank you for submitting your Request for IRB Review. The protocol identified above has been reviewed according to the policies of this institution and the provisions of applicable federal regulations. The review category is noted above, along with the expiration date, if applicable.

Once human participant research has been approved, it is the Principal Investigator’s (PI) responsibility to report any changes in research activity related to the project:
- The PI must submit all protocol, recruitment, advertising, and consent form amendments/revisions to the IRB for approval.
- The IRB must approve these changes prior to implementation.
- If you are a student, please note that it is required to include the IRB approval letter in the library when you submit the dissertation/thesis.
- The PI must promptly inform the IRB of all unanticipated serious adverse (within 24 hours). All unanticipated adverse events must be reported to the IRB within 1 week (see 45CFR46.103(b)(2)). Failure to comply with these federally mandated responsibilities may result in suspension or termination of the project.
- Review study with the IRB at least 10 business days prior to expiration.
- Notify the IRB when the study is complete.

If you have any questions, please contact Research Integrity Specialist in the Office of Sponsored Programs and Research Integrity at 719-255-3903 or irb@uccs.edu

Thank you for your concern about human subject protection issues, and good luck with your research.

Sincerely yours,

Zek Valleyrie
Zek Valleyrie, PhD
IRB Reviewer

www.uccs.edu/irb/