The Impact of Student Success Rates When Mandatory Tutoring is Applied to a First-Semester Barrier Course in Writing at a Two-Year Community College.

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Dedication

I dedicate this work to my friend and mentor, Dr. Kenneth Klawitter. His leadership style, ethics, values, and determination to best serve all stakeholders have influenced me in more ways than I can express. He taught me the value of using the concept of "goodness of fit" and the importance of being a leader who inspires the people under them to grow to their fullest potential without seeking personal recognition. His impact on countless others will transcend time and may never be fully realized. I am truly a better person and a better educational leader because of Dr. Klawitter.

I also dedicate this to my mother for all the love and support she has provided me throughout my life through the personal and professional pathways I have undertaken. She was a Sunday school teacher for over forty years and taught me my first lessons in religion and my first lessons on playing the piano. She was a natural teacher and inspiration for the life I pursued.

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Abstract

Community colleges face unique challenges in educating students due to their open-access policies and the need to retain students through successful completion of courses, especially those identified as barrier courses. This study examined the impact of applying a mandatory tutoring requirement in a first-year writing course to increase course success rates and writing proficiencies. A Communications-121 writing course taught at a community college in Southeastern Pennsylvania was identified as one of the top 10 barrier courses with a low course success rate of 62%. In order to address this issue, a quasi-experimental study was designed to examine the impact of three different tutoring models on course success rates: mandatory, embedded, and voluntary. The study also explored the relationship between at-risk student populations (first-generation, ethnicity, and Pell Grant recipients) and the various tutoring models. The mandatory tutoring intervention used in this quantitative study was not shown to be the best model; however, there was a positive relationship between at-risk students and the mandatory tutoring model. Exit surveys also showed that a majority of students who used tutoring services reported that they would use a tutor in future courses and would recommend tutoring to their classmates.

Keywords: tutoring, mandatory tutoring, barrier courses, first-year writing courses, retention, success rates

CHAPTER I

Introduction

A persistent issue facing a two-year community college in Southeastern Pennsylvania is that many first-year writing students are not utilizing the professional tutoring services available to them in the Academic Learning Commons to improve their writing proficiencies; in fact, the Director of Tutoring services for the college reported that only 11% of the student population sought the assistance of a tutor in 2022-23. Mattison (2012) suggested that educators needed to make instructional support programs available through a wide range of offerings that could help to close achievement gaps. This would include resources such as writing centers and professional tutors. There is a need to increase the number of students who utilize the services of a professional writing tutor, especially at-risk students such as first-generation students and economically disadvantaged students. Writing centers and the use of tutoring to improve students' literacy skills historically developed to accommodate low-skilled writers, especially veterans, underprepared students, and minorities in need of improving the skill sets that would allow them to successfully meet the challenges of higher education (Ball, 2014; Missakian et al., 2016; Ugo, 2010).

Additionally, the college is a designated Hispanic Severing Institute (HSI) with a population of over 40% Hispanic students. These students can also be first-generation and economically disadvantaged students who would benefit from more individualized tutoring support. In a study of academic supports within community colleges, Hendriksen et al. (2005) found that tutored students had a 2.78 average grade point average (GPA) compared with a 2.64 GPA for non-tutored students. Overall, tutored students had a 75%

pass rate versus a 71% pass rate for non-tutored students. Any student at that college who is unsuccessful in passing a reading and/or writing placement examination must enroll in developmental courses until written communication skills are improved. The college's developmental courses receive college credit but do not count towards graduation requirements and can often impact retention and on-time graduation rates. A study by Rheinheimer et al. (2010) showed that tutoring was an overwhelmingly positive predictor of persistence, retention, and degree completion for at-risk students and claimed that tutoring was a valuable intervention for future academic success.

Background

The literature review for this capstone project formed the basis for the development of this study and the connections to relevant frameworks that supported the premise centered on the use of a mandatory tutoring model in a barrier/gateway course for writing. This study considered the course success rates of students in first-year writing courses when a mandatory, voluntary, or embedded tutoring model was applied. Several key factors have been associated with analyzing the data in this study based on the project topic and the unique environmental stressors and demographics associated with a community college experience.

Communications-121 (COM-121) is a first-year writing course required of all community college students and is considered one of the college's top 10 barrier courses. Student success rates below 70% in course completion constitute a barrier course. In 2022, the course success rates at the community college in Southeastern Pennsylvania were 62% for all COM-121 courses. This meant that 38% of the students had to repeat

and successfully complete the COM-121 course before moving on to other program courses that often require COM-121 as a pre-requisite.

Many students fail in their first attempt at taking the COM-121 course and must repeat the course two or three times before successful completion. Failure to pass a first-year writing course may have detrimental impacts on retention and on-time graduation rates, which are key performance indicators in the college's five-year Strategic Goals. Tinto (1999) argued that students need to be grounded in a learning environment that promotes students as valued members of the institution. This is accomplished by having supportive institutional mechanisms to encourage intentional contact with faculty, staff, and other students to increase retention and student persistence.

One of the most prevalent challenges that community colleges face in increasing student retention and persistence comes through their use of open-access enrollment. Raby (2020) referred to open access as "A foundational philosophy of the community college" (p. 41). This embedded philosophy is a cornerstone principle for all community colleges charged to make education available to all students and to ensure no individual will ever be denied access to education due to a selective admissions process.

Four-year college students can live on campus, which has clear advantages that can help with retention and a sense of belonging that many community college students cannot realize. Housing options can give students a sense of safety and support in a first-year experience, the ability to bond with a potential roommate, and access to activities and gatherings that encourage student connections with the campus (Chen, 2022). Housing is not an option for most community colleges, so other types of campus strategies must be developed to compensate for the deficit caused by a student's need to

commute to the campus. One of these strategies is building relationships through available student services; however, many first-year students at a community college do not pursue them. Tutoring and writing center participation are two services available at most higher education institutes that can help bridge the gap towards positive retention and course completion, especially with barrier courses.

According to Phillippe (2023) from The American Association of Community Colleges, part-time students outnumber full-time students by nearly 2 to 1. 66% of students attended part-time while only 34% attended as full-time students. This also included 30% of first-generation students, 16% of single parents, and a population of 35% of students between the ages of 22 and 39. These variables greatly impact community colleges that are held to a high standard for reporting data to the Integrated Postsecondary Education Data System (IPEDS). This system requires community colleges to report graduation rates for first-time, full-time students who successfully complete their degrees after three years. This is a very high bar to meet, given the unique circumstances of community college students. Building relationships through campus initiatives such as tutoring and writing centers can help close the retention and graduation gaps and greatly impact first-year students' retention and persistence toward graduation.

Capstone Focus

The inherent problem for walk-in writing centers and tutoring labs is that they assume struggling students will access the services that professional tutors can provide to them; however, at-risk and struggling students often fail to consider this resource as a means of improving the writing skills needed in all of their course work. Rheinheimer et al. (2010) argued that at-risk students tend to avoid social resources like writing centers

or professional tutors for help. These students may have educational backgrounds lacking the skills needed to improve academic achievement and are reluctant to reach beyond their comfort zones.

This research will focus on institutional ex-post facto (archival) data from past semesters and data from a quasi-experimental project consisting of two sections of Communications-121 (COM-121), a first-year writing course. Two sections of COM-121 will function as the experimental group. They will be exposed to an independent variable of a mandatory tutoring requirement, and two sections of COM-121 will function as the control group without being exposed to the independent variable. This experimental group will be analyzed and compared to the control group and ex-post facto data, including past sections of COM-121 that utilized an embedded tutor.

Research Questions

This research study will be used to determine if significant differences in course success rates can be realized when a mandatory tutoring requirement is included for first-year students in a Communications-121 writing course at a two-year community college in Southeastern Pennsylvania. Mid-term and final grades will be measured within a quantitative study to determine course success rates with a sample group consisting of students who participated in mandatory tutoring, students who participated in voluntary or no tutoring, and students who had access to an embedded tutor as a viable but voluntary resource. The study asks the following questions:

1. What is the impact of mandatory tutoring requirements for increasing course success rates in a first-year (barrier) writing course as measured by mid-term and final grades?

2. Is there a significant difference in writing proficiencies, as measured by course grades, between students who participate in mandatory tutoring and those who participate in voluntary tutoring, embedded tutoring, or those who never access tutoring services?
3. What is the relationship between at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates when enrolled in a first-year (barrier) writing course?

Expected Outcomes

This action research study is intended to determine if mandatory tutoring can increase course success rates of a first-year Communications-121 (COM-121) writing course required of all degree-seeking students enrolled at a two-year community college. Specific outcomes will include:

1. To determine if the collected data supports the implementation of mandatory tutoring for all or some students of the COM-121 writing course
2. To analyze various tutoring practices and their impact on the successful completion of a barrier course based on mid-term and final grades
3. To recommend the implementation of some variation of mandatory tutoring for first-year writing students to increase student retention and on-time graduations
4. To determine if tutor relationships help students improve their self-efficacy as they transfer acquired knowledge to future program courses

Financial Implications

The primary budget considerations for implementing a mandatory tutoring requirement for all Communications-121 (COM-121) students would require hiring up to

seven part-time tutors designated to service all COM-121 students in every section and form of modality, including face-to-face, remote, and online offerings. The quasi-experimental model used in this study is based on each COM-121 student receiving a minimum of five 30-minute tutoring sessions per semester. The fall and spring semesters average about 600 enrolled students, and the summer term services approximately 200 students for an estimated implementation cost of approximately $50,000.00. This cost is based on a tutor's salary of $25.00 per hour, including 2.5 tutoring hours per student or a cost of $62.50 per student.

Summary

Many students fail the Communication-121 (COM-121) course on their first attempt and must repeat it two or three times before successful completion. Passing COM-121 is essential for enrollment in future courses requiring the course as a prerequisite for completing a degree or certificate. COM-121 is a barrier course that can impede a student's ability to complete a degree and graduate within a three-year time period.

The current three-year graduation rate for first-time/full-time (FTFT) students at the community college is 25%. Finding positive interventions, such as mandatory tutoring, may offer one way to get more students to complete their degrees on time. This study will explore potential interventions and strategies to increase the number of successful course completions for the COM-121 barrier course and to increase semester-to-semester retention and on-time graduation rates.

CHAPTER II

Literature Review

Community colleges throughout the country share many common factors that contribute to the successful completion rates of degree-seeking individuals. The unique demographic composite of community college students, combined with an open-access policy, presents numerous challenges in achieving successful on-time graduation rates and overall student retention. According to Mullin (2017), an open-access policy allows anyone in the community to enroll as opposed to a selective admission process used by most 4-year institutes of higher education. Community colleges must embrace multiple approaches to breaking down the barriers that can keep students from conferring a degree that could potentially be a life-altering milestone for them.

One strategy to address student persistence and retention can be realized through tutoring services available to students at a particular institution. Numerous models for how and when to provide or require tutoring for students are addressed by student writing and learning centers throughout the country. Finding the appropriate model to implement at the community college level has multiple variables that must be considered. One of the most prevalent variables contributing to student resistance to tutoring comes with the additional *out-of-class* time that may be required. Students who have daily commutes to the campus and are time-bound by family or job responsibilities may find the additional time to be intrusive.

The approach to tutoring in higher education can vary greatly due to the institution's specific requirements. Research and data related to tutoring models and their use are not reporting categories within the Integrated Postsecondary Educational Data

System (IPEDS) or the National Postsecondary Education Cooperative (NPEC); however, extensive research and data are available relating to tutoring models and structures for K -12 systems, especially in the post-covid era. This data provides an essential context for this study because of the close relationship between high school-aged students and freshman college students. The habits and mental models these high school students bring with them to college concerning tutoring can dramatically impact their willingness to embrace tutoring opportunities in a post-secondary environment.

Fong (2021) from the Institute of Educational Sciences reviewed important information concerning the need for high-quality tutoring in a post-pandemic climate within K-12 school systems. This model requires tutoring at school and during normal school hours of three or more 30-minute sessions. These sessions should be staffed with teachers of professional tutors who are well-trained beyond the scope of peer tutors, volunteers, or parents (Fong, 2021; Sparks, 2023). Sparks (2023) further provided current data that showed 40% of school leaders claimed that high-dosage or high-quality tutoring had increased from 2021 to 2022, with an estimated 30% of students getting intensive tutoring. 43% of high-poverty and high-minority schools provided this type of tutoring versus only a 33% of more affluent schools or those serving fewer than 75% of minorities or students of color.

Community Colleges are often a bridge for many students between high school and their first higher education experience, but the environments are clearly different and need to be given additional consideration due to the unique variables that influence all aspects of the higher education experience. To better understand the relationship between tutoring and the environments, it is important to have a context for understanding the role

community colleges have played in the educational system from a historical and local perspective.

Community Colleges Perspectives

Historical Development

National. The existence of the community college can be traced back to the Morrill Act of 1862. Originally referenced as junior colleges or two-year colleges, the Land Grant Act sought to expand access to public higher education by creating pathways for individuals to attend college who had been formally denied access to higher education for multiple reasons. A second Morrill Act of 1890 sought to withhold federal funding from any land grant institution that restricted admission based on race unless a state allowed minorities to attend a separate and established institute of higher learning. Under the Morrill Act provisions, the first junior college in America was championed in 1901 by William Raineu Harper, President of the University of Chicago (Drury, 2003; Goudas, 2020; Mello, 2000).

According to Jurgens (2010), a prevailing attitude in the mid-eighteen hundreds was underway to create a junior college system that would relieve universities of the responsibilities of providing general education to qualified high school graduates. Lower-division foundational education was considered to be a burden to the universities and could impede the university's true mission because they "believed that universities could not successfully reach their true research maturity and remain exclusive developers of higher education if they continued to be responsible for providing education to their students" (p. 252). Teaching general education courses became a natural part of the community college mission.

Drury (2003) reported that by 1930, the American Association of Junior Colleges was established to help navigate the changing landscape of the community college movement. In 1930, the *Junior College Journal* was first published to discuss vocational curricula and to supply training materials. A report by the Carnegie Foundation in 1932 found that state universities had a majority hold on research and training for higher professions. The state colleges provided education for mid-professions such as teaching, and the junior colleges provided general education for semi-professions and vocational training (Drury, 2003). The delineation of the three academic paradigms was made clear and encouraged a positive recognition of the role of community colleges.

Two major historical events served to be the impetus for the rise in community college interest from the public. The first of these events would be the great depression starting in 1929. Young people were out of work and needed training to find the few jobs that were available. From 1929-1939, enrollment in community colleges grew from 56,000 to over 150,000 (Drury, 2003). College educations at this time were experiencing a positive perception as they were seen as pathways to economic mobility and opportunities for upward mobility from a social perspective. The second major event came after W.W. II and the passing of the G.I. Bill of Rights of 1944, which provided financial incentives for veterans to seek additional education or training for reintegration into the American workforce (Drury, 2003; Goudas, 2020; Mello, 2000).

In 1947, the Truman Commission Report for the Higher Education for an American Democracy was released to support the establishment of junior colleges as a legitimate and viable academic entity. The report endorsed an objective of making education available to everyone for little or no tuition (Drury, 2003; Jurgens, 2010;

Mello, 2000). By 1957, a committee was established to recommend articulation agreements and transfer credits from junior colleges to four-year institutions. In the 1960s, enrollments in community colleges were rapidly expanding, going from 1 million in 1965 to 2.2 million by 1970. This same period of time saw the addition of Tribal Colleges to serve the Native American populations. The 70's and 80's began movements towards expansions in areas such as workforce development and joint ventures with community colleges and business partners. This concept continued through the 1990s when new relationships with high schools began forming as a pathway to higher education (Drury, 2003).

The intentionality of a national movement towards supporting a community college education has grown exponentially since the first college opened its doors in 1901; however, the mission and purpose of the community college experience remained intact and strengthened through the partnerships within the communities they serve. Ongoing communications with community members help establish clear directions for program curriculums to serve the community's unique needs and ensure that students receive the required skills to enter the workforce or transfer their general education credits to a four-year program.

Pennsylvania. The state of Pennsylvania adopted the Community College Act of 1963 on August 24, 1963. This Act created the framework for establishing and operating community college institutions throughout the Commonwealth. The 1963 Act authorized school districts, county boards, and municipalities to sponsor community colleges through specific taxes being levied by the districts and municipalities and by providing reimbursements by the Commonwealth for certain costs and expenses (Community

College Act, 1963). Part I, Chapter 35 of the Title 22 Pennsylvania Code further details the required guidelines needed for the operation of a community college in the Commonwealth.

According to Rink (2020), funding sources for community colleges in Pennsylvania are to be shared in equal parts between the state, local sponsors, and tuition and fees; however, that reality has never truly come to fruition; in fact, the state budgets for community colleges remained flat for community colleges under Governor Wolfe. Pennsylvania currently has 15 community colleges that operate on budgets from $13 million a year to more than $140 million for the largest systems. Local community support also varies greatly from $1.2 million in Cambria County to over $30 million for the city of Philadelphia and its community college.

Aiken (2023) reported that Governor Josh Shapiro had proposed a slight increase for community colleges in the 2023-34 budget at a 2% funding bump. This would represent an increase from $256 million to $261 million across the community college system. Since the 2012-13 budget, state system funding for community colleges has grown by 20.9%; however, there were many years when the budgets were flat during that period. In 2023, a U.S. News and World Report ranking placed Pennsylvania 48th for low debt and 47th for tuition and costs. The State Higher Education Executive Officers Associations also reported that Pennsylvania ranked 48th for funding public college students. Overall, Pennsylvania students received an average of $4100 less in funding compared to national averages (Aiken, 2023).

Community College Data and Statistics

The American Association of Community Colleges reported current data and statistics pertaining to community colleges throughout the country, including the following information: There are 932 public, 35 tribal, and 7 independent community colleges that awarded 877,249 associate degrees and 592,863 certificates in 2020-2021. In Fall 2021, headcount enrollments included 6.1 million college credits and 4.1 million noncredit enrollments, down by .4% from Fall 2021 to Fall 2022 (Phillippe, 2023).

The average age of community college students is 27, and 30% of all students are considered first-generation attendees. 66% of the student enrollments are part-time, while 34% are full-time students who pay an average annual tuition of $3,860, compared to the average public 4-year college tuition of $10,940. Community College revenues included 21.8% in tuition, 18.5% in federal funding, 34.4% in state funding, 21.4% in local funding, and 5.9% in other funding streams (Phillippe, 2023).

Shapiro (2020) from The National Student Clearinghouse Research Center reported a positive movement in student enrollment in community colleges as the two-year institutes continue to feel the impact of the COVID-19 pandemic. Community colleges are starting to grow in spring 2023 (+2,1%) with a new infusion of dual enrollments (age 17 and under) and incoming freshmen; in fact, dual enrollment went from (+2.9% in 2022 to +12.8% in 2023). Certificate program enrollment was up (+5.5%), while associate degrees saw a minimal (+0.3%) growth.

Overall graduation rates are based on a first-time full-time student's ability to graduate from a community college in three years; however, many students require more time to fulfill the requirements of the degree they seek. Two-year retention rates overall

were 46.9% for first-year students returning one year later. Full-time students were 59%, and 2-year public part-time students were 39%, with a 2-year public graduation rate after six years of 39.22% (Goudas, 2021).

Unique Challenges Compared to Four-Year Institutions

Open Access/Enrollment

One of the most prevalent challenges that community colleges face is the concept of open-access enrollment. Raby (2020) referred to open access as "A foundational philosophy of the community college" (p. 41). This embedded philosophy is a cornerstone principle for all community colleges' charge to make education available to all students and to ensure no individual will ever be denied access through a selective admissions process like is used by four-year institutes; therefore, community colleges function with an unknown and fluctuating variable each semester. They cannot be as intentional about expenditures and costs because they cannot rely on a level of funding based on a stabilized student enrollment count attained through selective admissions (Mullin, 2017).

Elfman (2023) reported on the challenges of an open-access policy in a post-pandemic environment. Economic factors and funding support for community colleges are being impacted by factors threatening open-access participation by the very individuals who need it the most. These individuals cannot prioritize education for various reasons, including "finances, family, illness, lack of internet or inability to adapt to online learning" (p. 24). Social and economic barriers mean that community colleges must continue finding new and innovative ways to offer students the required access and flexibility. Community colleges must also be keenly aware of the workforce training

needs in their community. They must respond quickly to changes in training and curriculum to keep students marketable and competitive. The open access policy is a noble practice for community colleges, but it can also create many unstable and unknown factors in keeping the community college stable and viable.

Housing Versus Commuting

A significant consideration for the unique variables associated with community colleges comes in understanding the impact that housing availability can have on student retention and persistence. A study in 2022 revealed that 81% of public two-year colleges provide students with housing options compared to only 29% of community colleges (Phillippe, 2023). According to Abelson (2023), the National Center for Education Statistics (NCES) recently reported on the struggles being felt by students in higher education for basic needs. Nearly 23.4% of community college undergraduates are experiencing low or inadequate food security, and 8% of all community college students are experiencing some level of homelessness. These alarming statistics reveal the true spirit of the community college ethos and the need to educate people from diverse backgrounds and challenging circumstances to ensure a stronger future.

Students living on campus have clear advantages that can help with retention and a sense of belonging not realized by students in a community college environment. Housing options can give students a sense of safety and support in a first-year experience, the ability to bond with a potential roommate, and access to activities and gatherings that encourage student identity with the campus. Living on campus is not an option for most community colleges, so other types of campus strategies must be developed to compensate for the deficit caused by students' need to commute to the campus. One of

these strategies is building relationships through available student services; however, many first-year students at a community college do not pursue them. Tutoring and writing center participation are two available services at most higher education institutes that can help bridge the gap towards positive retention and course completion, especially with barrier courses.

Part-time versus Full-time Enrollment & Unique Demographics

According to Phillippe (2023) from The American Association of Community Colleges, part-time students outnumber full-time students by nearly 2 to 1. 66% of students attended part-time, while only 34% attended as full-time students. This also included 30% of first-generation students, 16% of single parents, and a population of 35% of students between the ages of 22 and 39. These variables greatly impact community colleges, which are held to a high standard for reporting to the Integrated Postsecondary Education Data System (IPEDS). This system requires community colleges to declare graduation rates for first-time, full-time students who graduate after 3 years. This is a very high bar to meet, given the unique circumstances of students who tend to attend a community college. A second measuring unit, the Voluntary Framework of Accountability (VFA), measures all students and a six-year timeframe for completion. In its recent report on community college data, the American Association of Community Colleges (2023) reported the IPEDS rate at 25%, while the VFA reported success rates at 59%.

Conceptual Frameworks

The overarching framework used for consideration of this capstone is grounded in the work of Tinto (1975) and his ongoing seminal work on the retention and persistence

of first-year college students. Tinto's initial framework considered the relationships between the college environment of academic and social issues and the individuals who experience the effects of these systems. The framework was presented as the Student Integration Model. His initial premise and research have opened the door to expanded consideration concerning retention and student success. Numerous researchers are interested in finding ways to retain students once they enter higher education systems. Tinto made a significant shift in thinking from previously held perspectives on student persistence and retention. Before his study, mainstream thinking believed that certain existing attributes, skills, and motivations impeded their performance in higher education environments (Tinto, 2006).

Tinto (1999) continued with his seminal work in retention, acknowledging that while new strategies were being implemented with some success, they were having a limited impact and encouraged the notion that institutions needed to understand that the core causes of retention are not simply about students. Still, it is also directly correlated to the character of their settings. He presented four key components needed to help improve retention: 1) provide clear, informational resources concerning the institute, 2) the accessibility of academic, social, and personal supports, 3) create environments where the students view themselves as a valued member, and 4) students must be learning.

By the early years of the 2000s, many theorists came to understand the importance of the student in the equation and how a focus on student-related variables needed to be considered on a deeper level. Tinto (2006) addressed this as a realization that "It is one thing to understand why students leave; it is another to know what institutions can do to help students stay and succeed" (p. 6). The focus on ways to

increase student retention began to grow into many other areas, such as how the role of families and their backgrounds influenced retention and persistence. Economic factors began to be considered along with cultural and social differences and student engagement variables in a particular institute (Tinto, 2006).

Tinto (2017) continued to be a strong voice in the area of persistence with his assertion that "…student retention has been shaped by theories that view student retention through the lens of institutional action and ask what institutions can do to retain their students. Students, however, do not seek to be retained. They seek to persist" (p. 254). Tinto also recognized early alert systems' role in identifying student needs, the appropriate ways to respond to them, and being sensitive to social supports, especially for first-generation and low-income students who need to foster self-efficacy to build confidence and persistence. Viewed through the student's eyes, persistence is only one factor in their successful journey. A sense of belonging and the perceptions of how they view the curriculum and its value to their studies are also contributing variables (p. 264).

A secondary framework will consider the use of Transfer Theory to ensure that tutoring practices build foundational skills that can be applied beyond the writing course. Various early theoretical models provide the basis for how this framework can be considered a logical inclusion with the seminal work of Tinto. According to Hajian (2019), transfer refers to the ability to apply prior learning and experience to a situation that is different from the situation from which the original learning was presented. Though many frameworks exist, this study will focus on the Theory of Identical Elements.

Thorndike and Woodworth (1901) advanced a theory that stated learning could be transferred from one distinct activity to a similar activity and used the example of the concept of training as related to the concept of performance. The researchers noticed that some subject matters did not affect their abilities to become strong problem solvers. They found that students were gaining general application of problem-solving; however, not to the degree of transfer that would effectively translate to problem-solving in a real-life scenario. This realization showed that an intentional relationship between curriculum and real-life demands was imperative; their work became the early models of active learning theories.

Predominate Themes Based on the Frameworks

Retention/Persistence

Burns (2010) addressed realities associated with student retention in community colleges and open-access policy for enrollment. Community colleges appeal to students with life circumstances that may limit their educational attainment. This can include child or family member care, single parenting, negative financial situations, enrolling in college later in life, being a first-generation student, needing to commute to college with transportation restrictions, and working full or part-time jobs; in fact, 70% of community college students can relate to at least one of these situations and 50% have reported connecting with two or more of these variables (Barhoum, 2018; Burns, 2010; Fike, 2008; Martin et al., 2014).

Community college students often enroll in courses and are less prepared than students attending four-year universities. Because those institutes have selective admissions, many students fail to meet the criteria to enroll and turn to community

college as an option. The impact of this resulted in a study by Fike (2008) that showed Fall-to-Fall retention rates to range from a low of 45% to a high of 48.4% of first-time, in-college (FTIC) students. One of the logistic regression models showed that enrollment in student services, such as tutoring, positively impacted student retention and persistence.

At-risk Students

First-generation students are susceptible to challenges that put them in an at-risk status, especially in their first semester and year of college. These students are the first in their families to go to college, with neither parent having attended college or been awarded a college degree. According to Schelbe et al. (2019), first-generation students begin their academic journey at a disadvantage over their peers. Family support is limited because of the inability to fully appreciate the challenges and obstacles that impact the social and emotional factors associated with the college experience. These students also often fail to realize the new expectations and academic standards that will be imposed on them through attendance at a higher education institution.

Markle and Stelzriede (2020) conducted research pertaining to first-generation students who participated in a first-generation learning community. The study examined variables related to the persistence and retention of first-generation students to continuing-generation students. The results showed that first-generation students who accessed the learning community saw gains in intellectual and interpersonal development and engagement that emphasized diverse perspectives. Students in the study also had lower household incomes, lower SAT scores, and lower levels of confidence. Students also felt they were less academically prepared than other groups in the study (p. 294).

Economically Disadvantaged populations are another variable within the at-risk population. Clarence et al. (2013) stated that there is a strong link between low socioeconomic status (SES) and students' low level of literacy achievement. Everett (2015) added an additional factor for first-generation students by asserting that they are often included in another at-risk population of economically disadvantaged (ED). Financial accessibility to funds for college can be a limiting factor for four-year colleges, but funding at a community college may make the process easier. 58% of students attending community colleges receive aid, with 38% receiving federal grants, 19% receiving federal loans, 125 receiving state aid, and 13% receiving institutional aid (p. 53).

Demographics associated with ethnicity are often another key indicator of how students may fare regarding persistence and retention. Hispanic Serving Institutions (HSI) are designated when the population of Hispanics exceeds 25% of the overall population. Karaman et al. (2021) identified the impact of two distinct constructs for first-year Hispanic college students - academic self-concept and social support. Academic self-confidence refers to a student's self-reflective insights on how they perceive individual academic abilities. This perception significantly correlates to academic achievement and test anxieties, translating to a psychosocial factor that challenges student retention among Hispanic students. Social support ranging from friends and family to teachers and mentors was shown to have a significant impact based on the types of support such as emotional, informational, feedback, or resources; however, students were more successful in retention when they applied a strong level of resilience as a characteristic (Karaman et al., 2021; Rahat & Ilhan, 2016).

Self-Efficacy

Self-efficacy plays a significant role in a student's persistence and determination to be successful in a higher education environment. Based on the work of Bandura (1977), self-efficacy is grounded in an individual's understanding that they have the skills and knowledge needed to complete a task or to achieve a specific target or goal. Bandura identified four areas of self-efficacy: mastery experiences, social modeling, social persuasion, and psychological responses. The first three areas explain ways in which individuals can learn and develop strategies to help with a positive image of themselves; however, the fourth area, the psychological response, may be the best indicator of struggling first-year college students. In this area, a person's emotional reactions to a variety of situations create emotional and physical reactions that can cause a great deal of anxiety and stress. When students lack self-confidence, they will likely not seek advice and support mechanisms that can help them cope with feelings of inadequacy in tasks like writing.

Learning Transfer: Identical Elements

Yang et al. (2013) and Rounsaville et al. (2022) referred to transfer as learning that utilizes knowledge from past applications to make new learning more accessible. Hajian (2019) isolated a specific form of transfer based on the theory of identical elements where learning can be transferred from one activity to another (p. 95). This theory includes low and high-road transfer concepts depending on the transfer level applied. Low-road transfer exists when there are many similar concepts, ideas, or learned tasks that can be easily transferred, while high-road transfer happens through the result of

"mindful abstractions of general principles among different events on different contexts and a deliberate search for connections among their structures" (p. 96).

Using tutoring models within a first-year writing course can help advance the concept of low-road transfer by providing scaffolding of writing techniques and strategies that can be applied to all writing situations within various programs and applications. Rounsaville et al. (2022) addressed transfer theory within the context of writing by raising the question of two distinct areas: 1) the role of conscious awareness in transfer and 2) the role of habit or routine. The authors considered four themes of relational character: Intentionality, Fidelity, directionality, and simultaneity (p. 140). While all areas can impact learning transfer within a tutoring model, fidelity may be of the most value.

Fidelity represents the "likeness" associated with various context structures that provide similarities or differences for the transfer process (Rounsaville et al., 2022). This concept of fidelity is manifested through situatedness, simulation, and scaffolding. All of these practices can help ensure that the learning applied within a tutoring mode can provide the basis for allowing the learned concepts to transfer across the writing in a specific course and into a generalized application within other courses that require writing-intensive curriculums. Similar to high or low-road transfer, fidelity can also be viewed as low-fidelity and high-fidelity constructs of learning transfer.

Hill (2016) and Devet (2015) argued that there is a need for writing centers and tutoring models to be intentional about the process of transfer. Writing labs or tutoring centers were discussed as places where transfer concepts must be fostered and guided so students understand writing-related knowledge's transportability (Hill, 2016, p. 77). Hill focused on the pedagogical techniques that were seen as the most salient practices to

influence transfer from the writing centers to other applications. They included having a high level of initial learning, seeing the similarities and differences between learning situations, understanding key concepts about writing, using metacognitive reflections, and promoting certain dispositions towards learning, such as active learning and motivation (pp. 79-80).

Gateway or Barrier Courses

Koch and Pistilli (2015) defined gateway courses as being in one of two categories. The first category includes any foundational course, such as developmental courses, that may be credit-bearing or non-credit-bearing. The second category is high-risk courses where grades of D, F, W (withdraws), or I (incompletes) are awarded. It is important to note that the W grade, which does not impact the GPA, is included in the Satisfactory Academic Progress (SAP) formula, which has implications for eligibility for financial aid. Once a student loses financial aid through excessive withdrawals, they often drop out of school. This process often occurs because students are unable to successfully complete identified barrier courses, such as first-year required writing courses.

Gateway courses present huge obstacles for certain groups of other identifiable at-risk students, including lower-income, first-generation, and underrepresented minority groups. This population represents the same groups of students who are least likely to attend college and may never finish a degree with a direct correlation to the inability to complete barrier courses that keep them from advancing onto other courses that may have the barrier course as a pre-requisite (Bloemer et al., 2017; Koch & Pistilli, 2015). Koch and Pistilli (2015) also argued that gateway course failure is directly related to college

retention rates. These students "leave with their dreams diverted if not extinguished and frequently with debt that they might never be able to repay" (p. 15).

Bloemer et al. (2017) cautioned that the real challenge of gateway courses comes from first identifying them and then being able to apply a fix that is appropriate and effective in increasing the success rates of these courses. This may include curriculum revisions or the complete redesign of a course that also considers staff changes or providing additional support to students, such as an innovative tutoring model. Most importantly, the authors suggested that gateway courses must be put into the context of the students the course is meant to serve. "Simply put, it is not reasonable to expect all courses to serve all students equally. Efforts to do so are doomed from the start and may actually do harm" (p. 6).

Tutoring-Related Discourse

Definitions

At-Risk Students. At-risk students are not experiencing success in school and are potential dropouts. They are usually low academic achievers who exhibit low self-esteem. Disproportionate numbers of them are males and minorities. Generally, they are from families with low socioeconomic status. "Students who are both low-income and of minority status are at higher risk. Their parents may have low educational backgrounds and may not have high educational expectations for their children" (Donnelly, 1987, p. 1)

Developmental Courses. These are courses assigned to students who failed to meet qualifying scores on entrance exams in various subject areas. Students must typically pass the developmental course before moving into college credit courses that will apply to the degree being sought (Vick et al., 2015).

Barrier/Gateway Courses. Barrier or gateway courses are basic and foundational courses that are generally lower-division courses that receive credit and are needed to satisfy pre-requisite requirements before taking other courses (Bloemer et al., 2017).

Drop-in Tutoring. A traditional model of one-to-one tutoring where two individuals meet to increase the knowledge and learning of a student from a professional tutor (Cooper, 2010, p. 21).

Mandatory Tutoring. The act of requiring students, especially first-year college students, to participate in a mandatory tutoring process as a condition of their coursework (Gordon, 2010).

Peer-Tutoring. Peer tutoring involves individuals from similar groups who are not professional instructors. It is a system whereby learners help each other and learn by teaching (Stewert et al., 2015).

Professional Tutors. These individuals possess a degree related to a particular content and expertise. These are paid positions (often part-time) within a college's writing center and are sometimes supplemented with peer tutors in a specific subject, such as math or English (Stewert et al., 2015).

Embedded Tutors. The embedded tutoring model and design can vary considerably across different institutions; however, in this study, an embedded tutor is a compensated individual assigned to specific course sections during the semester. The tutor receives specialized training from the administrator responsible for tutoring programming and works closely with the content teacher to establish the practices that will be used in the course. Tutors support all students in a particular section and often attend the course as an added support and opportunity to meet with students. The

embedded tutor may have access to the grades and assignments as a means of monitoring when a student is behind and may need encouragement or help in completing assignments.

Tutoring Models

Tutoring and Writing Centers

Tutoring and/or writing centers are the single most popular and pervasive model used by institutions within higher education. While no hard data exists to substantiate this reality, a search of websites from 10 Pennsylvania State System of Higher Education (PASSHE) schools, as well as all Pennsylvania Community Colleges, revealed that each institute had some form or variation of a writing center, writing labs, or tutoring centers where professional tutors and resources are available to service the students in face-to-face or remote modalities.

Writing centers and the use of tutoring to improve students' language skills historically developed to accommodate low-skilled writers, especially veterans, underprepared students, and minorities in need of improving the skills that would allow them to successfully meet the challenges of higher education (Ball, 2014; Missakian et al., 2016; Ugo, 2010). Missakian et al. (2016) also reported that academically proficient students could also be susceptible to the same writing issues as at-risk students when trying to meet qualifying placement exam scores. Failure to access the help of a tutor leads to incomplete coursework and the inability to graduate on time.

Vick et al. (2015) reported that students who sought tutoring outscored others by a 55% to 45% margin and received final grade averages that were 10% better. Pfrenger et al. (2017) also reported that tutored students successfully passed development courses at

higher rates than non-tutored students. Using an English Lab or writing center can have strong implications on how a student will succeed in their first year of college, so it is important to pursue all options that will get students to access this resource. Gray and Hoyt (2020) also found that people using writer centers saw average grades of 2.94 compared to 1.60 for those not using the center. The average grade in the specific courses was 3.25 for students who used the center and 2.18 for other new freshmen who opted not to use the center for support.

Despite the positive impact of the use of tutoring, Hedengren and Lockerd (2017) reported on the negative perspectives that some students have concerning the use of a writing center. The author's study looked at students who reported non-directive, non-productivity (NDNP) as the reason why they felt a writing consultation in the writing center did not improve their writing product or their writing process; in fact, NDNP was evident through student comments like, "This was a waste of time" (p. 133). Dissatisfaction among the students reported that there was a lack of concrete objectives during the sessions, which caused the students to be frustrated at the level of work that was accomplished. "I left the writing center with no notes, thesis, or better understanding of my argument" (p. 138). While this study involved a four-year institution, community colleges experience similar findings among students.

Bright (2017) acknowledged that using tutors at two-year colleges has some unique variables, such as needing to hire a wider variety of tutors, from English instructors to peer tutors with diverse backgrounds and experience. English instructors who enter the tutoring center environment may fail to make the switch from classroom practices to the role of tutors in the more traditional sense. This may mean that

consultations for students feel more like an office-hour visit with their instructor, and peer tutors run the risk of high turnover and a lack of longevity that allows for more sustainable and pervasive peer tutoring practices.

The inherent problem for walk-in writing centers and tutoring labs is that they assume struggling students will access the services that professional tutors can provide to them; however, at-risk and struggling students often fail to consider this resource as a means of improving the writing skills needed in all of their course work. Rheinheimer et al. (2010) argued that at-risk students tend to avoid social resources like writing centers or professional tutors for help. These students often have educational backgrounds that lack the skill sets needed to improve academic achievement, and they are reluctant to reach out beyond their comfort zones; however, according to Bielinska-Kwapisz (2015), students who accessed writing centers or labs have been shown to statistically outperform those who do not utilize the tutoring services available to them. The use of tutoring to improve academic writing skills increased student retention and student engagement.

Salem (2016) concluded that a parent's educational background and exposure to higher education can also play a factor in the desire of at-risk students to participate in tutoring programs. Rheinheimer et al. (2010) discussed the need for at-risk students to take advantage of programs in Pennsylvania that support economically disadvantaged students as an academic assistance strategy through tutoring programs, and they acknowledged that part of the problem is the failure of at-risk students to seek help when they need it. They concluded that at-risk students who sought tutoring services experienced higher student persistence, retention, and the likelihood of graduating. Gordon (2010) reported on the positive impact of tutoring through comments made by

two students in his study. One student commented, “The guy there helped me organize my paper when I was stuck.” Another said, “It actually made me start thinking about my paper” (p. 156). Hodges and White (2001) reported that students who access the services of a writing center report positive experiences, but economically disadvantaged students often have trouble seeking this type of intervention.

Embedded Tutoring

Embedded tutoring is an emerging practice that ultimately seeks to bring the tutor to the student. Embedded models can vary greatly to meet specific and unique needs; however, all models share the concept of tutors who are infused into a course in a regular and visible manner. Webster and Hansen (2014) discussed one model that was used at the University of Montana Writing Center, referred to as the Sidecar Project (SP). The purpose of the tutor-embedded model is to provide real-time and accessible guidance for both student and faculty growth. The model centers on four factors: “Management of collaboration logistics, demonstrated faculty buy-in, faculty-tutor integration, and student and faculty willingness to consider and respond to feedback” (p. 53).

The success of an embedded collaboration begins with faculty buy-in and the need to proactively plan for collaboration time between the tutor and the faculty member so that responsibilities and boundaries are clearly articulated in a formal or informal agreement (Carpenter et al., 2014; Webster & Hansen, 2014). Carpenter et al. (2014) reported that these types of embedded collaborations make a critical shift from the traditional writing center philosophy by moving the tutors from the writing centers to the classroom. Part of this philosophical shift requires faculty and students to realize that classroom instruction and writing centers as outside resources can find common ground.

This ability to develop synergy between the faculty and tutor inspires new and creative practices that foster positive student learning and growth.

Chaves et al. (2023) reported that embedded tutoring is not a new concept; however, it gained renewed interest during the COVID-19 pandemic as tutoring centers across the county sought innovative ways to reimage methods to increase student tutoring opportunities. This included finding ways to bring tutors to the students versus students needing to come to writing centers through their own initiatives. Four models of embedded tutoring were considered, including Harrisburg Area Community College (HACC) in central Pennsylvania. HACC is Pennsylvania's oldest and largest community college, serving approximately 13,000 students in five physical locations (p. 157). The college first piloted embedded tutoring in the late 2010s by accessing grant funding to pursue the new endeavor that was also incorporated into the college's Strategic Plan. They began by infusing tutors into gateway/barrier courses and at-risk courses as a vehicle to help increase student retention and success rates. All campuses now embrace the embedded model in all learning modalities, with multiple tutors supporting a variety of course sections with a focus on mathematics, biology, and English (Chaves et al., 2023).

Mandatory Versus Voluntary Tutoring

Wells (2016) addressed the use of writing centers as a mandatory requirement, especially for first-year students. This model requires students to participate as part of their course structure and requirements. The author presented several viewpoints for and against the practice of mandatory requirements, including the strain on institutional resources and student frustrations with time-consuming requirements that often require

long wait times in the writing centers. Students using writing centers achieved grades that were found to be higher on average than non-center users (Bielinska-Kwapisz, 2015; Hendriksen et al., 2005). Hendriksen et al. (2005) found that tutored students had a 2.78 average semester GPA compared with a 2.64 average semester GPA for non-tutored students. Overall, tutored students had a 75% pass rate versus a 71% pass rate for non-tutored students. Bielinska-Kwapisz (2015) found that a study of 315 first-year undergraduates showed that a student's intrinsic and extrinsic motivations determined if they would utilize tutoring service; in fact, 40% of the students who sought help fell into the top 40th percentile for grade distributions.

Edlin and Guy (2019) discussed using a mandatory supplemental instructor (SI) model for an elementary Algebra course at a community college. All students took the Systems-Wide Elementary Algebra Final Exam (SWEAFE) as a common assessment for the study. The results showed that additional mandatory tutoring correlated with a 3.795-point increase in the SWEAFE with a 95% confidence interval. The study also showed that additional mandatory instruction created a 26.5% higher than without the additional time. The study concluded that the additional mandatory requirement improved learning overall.

Gray and Hoyt (2020) discussed the question of who should attend tutoring despite their acknowledgment that tutoring "helps improve learning, retention of ideas, and student grades" (p. 1). One inherent issue for tutoring comes in the perception it has from students and faculty alike. Many students believe tutoring is reserved for struggling students, and they may not see themselves that way. Faculty may perpetuate that reality by having a similar perspective and by failing to understand that tutoring can benefit all

students at their unique level of need. Fain (2012) noted that community colleges have multiple supports (like tutoring or study prep) available to help students earn their degrees; in fact, 48% of all colleges offer placement test study aids, but only 13% of these colleges make that test prep mandatory (p. 1). Mandatory requirements in community colleges may offer students a better chance for success in college-level graduation requirements such as first-year writing courses.

Data on mandatory tutoring is limited, especially in the area of quantitative studies; however, the recent study by Gray and Hoyt (2020) produced some encouraging data for mandatory tutoring as a positive intervention for student success. The study also used a mixed-method approach to allow qualitative data to be analyzed from the participant's perspective. The study results showed that the average essay grade was 2.94 for mandatory participants versus 1.60 for students not using the writing center; in fact, the average final grade was 3.25 for participants versus 2.18 for new freshmen not using mandatory tutoring.

Pre- and post-student surveys supplied additional qualitative data on participants' perceptions and attitudes. Three questions using a 5-point Likert scale revealed the following outcomes.

Question 1: How likely are you to recommend writing centers to a friend

Pre-study: 2.90 Post-study 4.11

Question 2: How much do you think the writing center can help you on an essay?

Pre-study: 3.72 Post-study: 4.06

Question 3: How likely are you to visit the writing center for a future class?

Pre-study: 3.54 Pot-study: 4.13 (p. 3).

This recent study provided a solid context for continuing research on mandatory tutoring as a positive intervention for helping students be more successful in writing courses. More importantly, it shows that a mandatory requirement for tutoring changes attitudes and negative perceptions of tutoring, creating positive habits of learning transfer and the continued use of tutoring for future coursework.

Summary

Community colleges across the country face many challenges that are unique to two-year institutes and the varied demographics of the students who attend them. The common practice of open-access admissions for community college means that any individual seeking to better themselves through higher education has that opportunity. Community colleges that apply open access ensure attendance is guaranteed for everyone, unlike four-year institutions, which may deny a student the ability to begin a higher-education journey because they fail to meet the requirements for admission. Selective enrollment institutions that use competitive enrollment quotas based on academic excellence can discourage at-risk learners and keep them from starting their post-secondary education. While noble in its intentions, the open-access policy does come with a cost. Retention and course success rates for community college students are often very low due to the many variables that impact these key performance indicators.

The literature reviewed showed that many factors contribute to the inability of students to complete a degree at a community college. These include at-risk factors such as being first-generation students, coming from low socioeconomic backgrounds, needing to work full-time to support families, or being a part of a historically underperforming ethnic group. These factors at a commuting college can add additional strains based on

childcare, transportation, shift working, and./or the need to financially support a family. Overcoming some challenges requires determination and persistence; however, students often don't have the self-efficacy to get the help needed when obstacles arise, and they lack a sense of belonging and community that may exist at an institute with dorms and residency opportunities.

Addressing these student needs is a priority for community colleges that regularly promote many student services to help them through these times. Unfortunately, the literature shows that these students often fail to seek the support that is available, such as tutoring and writing centers. Meeting face-to-face with tutors in writing centers helps create a sense of belonging to the college by building positive relationships that include faculty and staff members on the campus. The literature review shows that it takes a multiple-focused approach to help students discover the best strategies to improve their ability to be successful and continue their education through positive retention and enrollment from semester to semester.

Applying a mandatory component to first-year writing students is one of the strategies that can help the community college retention equation and increase course success rates. The literature surrounding the positive effects of tutoring to increase academic proficiencies is cogent and consistent in its outcomes; however, the use of a mandatory approach to tutoring is not always a shared philosophy. The practice of a mandatory tutoring component would require a shift in the ethos of the community college that recognizes the constraints of their population but also accepts the realities of how a strong foundational experience in a first-year writing course may provide the self-efficacy, confidence, and skills to transfer their knowledge to other courses that will be

required throughout their program pathway. The outcomes of this study can provide data to be utilized for informed decisions about the potential of implementing a mandatory requirement as a college policy. The research may also be used to develop a modified mandatory program based on specific academic criteria, or it may be found to be an ineffective practice that is not a good fit for the college.

Chapter III will examine the specific methodology applied to this action research study and explain its purpose. It will also discuss the research plan, research design, validity, and financial implications.

CHAPTER III

Methodology

A persistent issue faced by a two-year community college in Southeastern Pennsylvania was that many first-year writing students were not utilizing the professional tutoring services available in the Academic Learning Commons to improve their writing proficiencies. Mattison (2012) suggested that educators needed to make instructional support programs available through a wide range of offerings that could help to close achievement gaps. This included resources such as writing centers and professional tutors. There was a need to increase the number of students who sought the services of a professional writing tutor, especially at-risk students such as first-generation students and economically disadvantaged students.

The literature review for this study helped inform the researcher of the positive impact tutoring had on first-year writing students in higher education. Vick et al. (2015) reported that students who sought tutoring outscored others by a 55% to 45% margin and received final grade averages that were 10% better. Pfrenger et al. (2017) also reported that tutored students successfully passed development courses at higher rates than non-tutored students. Using an English Lab or writing center had strong implications for how a student would succeed in their first year of college, so it was important to pursue all options that would get students to access this resource. Gray and Hoyt (2020) also found that people using writing centers saw average grades of 2.94 compared to 1.60 for those not using the center. The average grade in the specific courses was 3.25 for students who used the center and 2.18 for other new freshmen who opted not to use the center for support.

A second area of interest in the literature review came from looking at the unique challenges faced by students in community colleges. Burns (2010) addressed realities associated with student retention in community colleges due to open-access policies for enrollment. Community colleges appealed to students with life circumstances that limited their educational attainment. This included child or family member care, single parenting, negative financial situations, enrolling in college later in life, being a first-generation student, needing to commute to college with transportation restrictions, and working full or part-time jobs; in fact, 70% of community college students related to at least one of these situations and 50% reported connecting with two or more of these variables (Barhoum, 2018; Burns, 2010; Fike, 2008).

These two areas of exploration within the literature review developed a sense of synergy when applying a framework of persistence and retention of college students through the seminal work of Tinto (1975). Tinto (1999) presented four key components that are needed to help improve retention: 1) provide clear, informational resources concerning the institute, 2) the accessibility of academic, social, and personal supports, 3) create environments where the students view themselves as a valued member, and 4) students must be learning. By the early years of the 2000s, many theorists understood the importance of the student in the equation and how a focus on student-related variables needed to be considered on a deeper level. Tinto (2006) addressed this as a realization that “It is one thing to understand why students leave; it is another to know what institutions can do to help students stay and succeed” (p.6).

This chapter considered how a quasi-experimental action research study was developed to evaluate the impacts of mandatory tutoring for first-year writing students.

The study sought to determine if mandatory tutoring could improve course success rates and writing proficiencies, contributing to stronger student retention and persistence toward graduation. Applying a mandatory component to first-year writing students was one of the strategies considered to help in community college retention and course success rates. The literature surrounding the positive effects of tutoring to increase academic proficiencies was cogent and consistent in its outcomes; however, the use of a mandatory approach to tutoring was not always a shared philosophy. This study sought to consider tutoring from a variety of perspectives and to weigh the value ascribed to a mandatory tutoring requirement for all first-year students.

Purpose

This action research study was intended to determine if the use of mandatory tutoring could increase course success rates of a first-year Communications-121 (COM-121) writing course at a two-year community college in Southeastern Pennsylvania. COM-121 was a first-year writing course required of all students at the community college, and it was considered one of the top ten identified barrier or gateway courses. A barrier/gateway course was identified as having course success rates of below 70% completion. In 2022, the course success rates at a community college in Southeastern Pennsylvania were 62% for all COM-121 courses. This meant that 38% of the students were required to repeat and successfully complete the COM-121 course before they could enroll in other courses that often require COM-121 as a pre-requisite. Failing COM-121 was a variable associated with a student's ability to complete a degree on time.

The key performance indicator (KPI) for on-time graduation was a data point that must be reported annually by all community colleges, and it was considered in choosing

the action research topic. Additional KPIs impacted by this action research study included retention and course success rates. Selecting a KPI for action research that would most significantly contribute to overall performance by measuring trends and comparison data was crucial. Trends identified in research look at the data from year to year or at multiple years across time, while comparisons look at similar data from an organizational process perspective (Suryadi, 2007). This study focused on the organizational process of tutoring practices within the broader KPIs of course success rates, retention, and on-time graduation.

According to Stringer (2014), an isolated issue or organizational process associated with KPI could be researched and implemented within a shorter and more manageable time frame. It allows for practical and immediate improvements to be realized by the research site. Hendricks (2017) added that action research is a systemic process that requires the incorporation of specific and, therefore, measurable steps in a repeating cycle of reflection, action, and evaluation. This process allowed for a problem to be identified, a potential solution or action to be applied, and an evaluation of collected data to be tested for the effectiveness of the action that was taken.

Desired Outcomes

Specific outcomes and research questions for the study:

1. To determine if the collected data supports the implementation of mandatory tutoring for all or some students of the COM-121 writing course
2. To analyze various tutoring practices and their impact on the successful completion of a barrier course based on mid-term and final grades

3. To recommend the implementation of some variation of mandatory tutoring for first-year writing students to increase student retention and on-time graduations
4. To determine if tutor relationships help students improve their self-efficacy as they transfer acquired knowledge to future program courses

Research Questions

1. What is the impact of mandatory tutoring requirements for increasing course success rates in a first-year (barrier) writing course as measured by mid-term and final grades?
2. Is there a significant difference in writing proficiencies, as measured by course grades, between students who participate in mandatory tutoring and those who participate in voluntary tutoring, embedded tutoring, or those who never access tutoring services?
3. What is the relationship between at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates when enrolled in a first-year (barrier) writing course?

Setting and Participants

School Location

A two-year community college in Southeastern Pennsylvania provided the setting for a quasi-experimental study that considered the impact of mandatory tutoring in a first-year writing course. Founded in 1971, the community college was one of fifteen community colleges in Pennsylvania. The college was an accredited, comprehensive, open-access institution of higher education. Accreditation was awarded through the Middle States Commission of Higher Education (MSCHE). Educational opportunities

included associate degrees, certificate and diploma programs, career-focused training, and skills training for business and industry. The college offered non-credit GED preparation, English as a Second Language (ESL) instruction, and short-term workforce training, primarily in healthcare and manufacturing technology.

School Demographics

The community college demographics for 2021-2022 included 6,457 students, 164 online courses, and 16 online programs. The average age of students was 26, with 68% female and 32% male students. 76% of students were part-time, and 24% were enrolled as full-time students. The community college was a diverse campus and was one of only two community colleges designated as a Hispanic Serving Institutes (HSI). Hispanic populations (Table 1) and students from economically disadvantaged backgrounds receiving Pell Grants (Table 2) represented two focus areas in this study. The data described in the included tables from the Fall of 2022 reflect the college composition.

Table 1

Fall 2022 Student body by Racial or Ethnic Group

Fall 2022	Part-Time	Full-Time	Grand Total
American Indian or Alaska Native	0.20%	0.09%	0.29%
Asian	1.74%	0.53%	2.27%
Black or African American	7.65%	1.13%	8.78%
Hispanic/Latino	29.94%	7.65%	37.59%
Native Hawaiian or Other Pacific Islander	0.20%	0.04%	0.24%
Non-resident Alien	0.09%	0.00%	0.09%
Race and Ethnicity Unknown	0.22%	0.09%	0.31%
Two or More Races	2.40%	0.68%	3.09%
White	37.28%	10.06%	47.34%
Grand Total	79.73%	20.27%	100.00%

Table 2

Fall 2022 Full-Time Student Body by Racial or Ethnic Group and Pell Recipient

Fall 2022	Total Population	Number of Pell Recipients	% of Pell Recipients
American Indian or Alaska Native	0.20%	0.09%	0.29%
Asian	1.74%	0.53%	2.27%
Black or African American	7.65%	1.13%	8.78%
Hispanic/Latino	29.94%	7.65%	37.59%
Native Hawaiian or Other Pacific Islander	0.20%	0.04%	0.24%
Non-resident Alien	0.09%	0.00%	0.09%
Race and Ethnicity Unknown	0.22%	0.09%	0.31%
Two or More Races	2.40%	0.68%	3.09%
White	37.28%	10.06%	47.34%
Grand Total	79.73%	20.27%	100.00%

The diversity of the students on the campus was a key consideration in any data to be collected through this study. The number of students receiving Pell Grants at the college was historically in the 60% range and suggested that 6 out of 10 students enrolled at the college came from economically disadvantaged families (Figure 1). Despite this at-risk designation, success rates for these students across all classes averaged 70% (Figure 2). Data for ethnicity/race represented a larger divide among the population, especially when African American and Hispanic students were compared to white students (Figure 3). This difference showed a significant achievement gap when comparing the white population to the Hispanic population, where gaps increased from 12% in 2018 to 15% in 2020 (Figure 4).

Figure 1

Share of Enrollment by Pell Grants

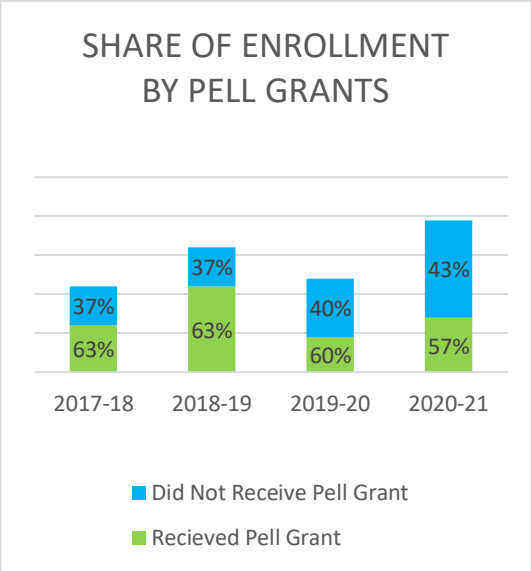


Figure 2

Success Rates by Pell Status

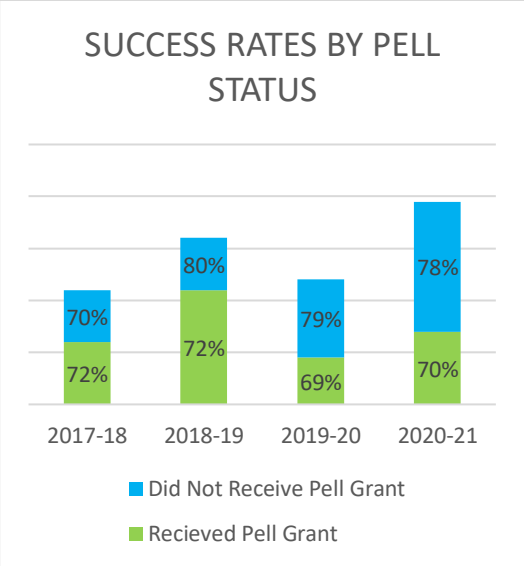


Figure 3

Success Rates by Select Race/Ethnicity

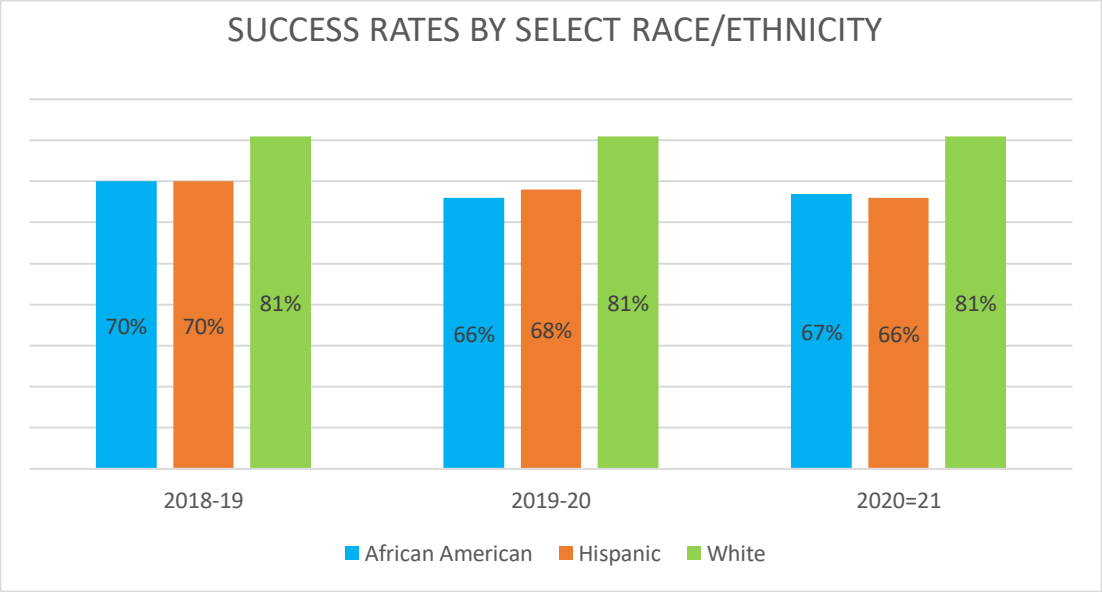
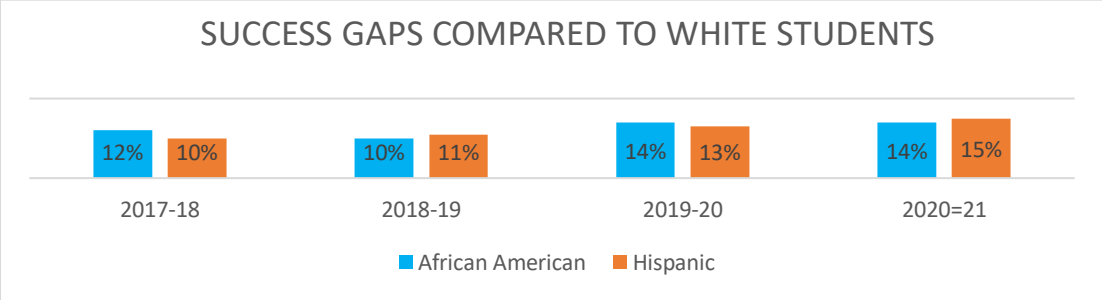


Figure 4

Success Gaps Compared to White Students



Participants

The research was focused on institutional ex-post facto (archival) data from the fall 2023 semester and data from a quasi-experimental study conducted in the spring of 2024; therefore, the IRB approved the study as an exempt project that did not require student consent. The study utilized 79 enrolled students in four sections of Communications-121 (COM-121) being taught by the same instructor during the spring 2024 semester. Two sections included mandatory tutoring as a part of the curriculum, and two sections operated with a voluntary approach to tutoring services. Sections were limited to twenty-four seats. Initial enrollments for the two sections of mandatory tutoring included 44 students and enrollments for the two sections without the mandatory requirement included 35 students. Students learned of the mandatory tutoring requirements for the course during the initial class meetings and had the option to enroll in a different COM-121 section if desired.

The selection of participants was based strictly on student enrollment in each unique section. A non-equivalent control group design allowed for two groups to be established that were similar to each other; however, one group was subjected to the independent variable of mandatory tutoring for the semester. Mertler (2022) stated that

this may be the best model in school settings since students are already assigned to pre-existing variables such as classes, grade levels, or other fixed conditions. This study utilized four of the thirty sections offered for the spring 2024 semester. Each section contained pre-established enrollments and variables such as days and times of the section offerings. Students registered through an advisor or a self-service enrollment platform.

There was no indication during the registration process that identified sections as having a mandatory tutoring requirement. Tutoring requirements vary across the individual sections and are established by a unique instructor for each section. Students registered through a self-service platform or through an advisor in the advising center. All classes were face-to-face sections that were held between the hours of 9 am and 3 pm. Demographic information for all students was collected after the semester to determine if the various at-risk populations identified in the study were represented in the experimental group.

The study included additional data from the fall semester of 2023, which consisted of 65 students from three COM-121 sections that utilized an embedded tutor model. The same instructor taught these three sections and the four sections of the spring 2024 quasi-experimental study.

Research Plan

Plan/Intervention

The development of this plan was driven by the need to increase the number of students who could increase their course success rates in a first-year writing course through the use of a tutor. Tutors at RACC were accessible to all students through face-

to-face, remote, and online platforms; however, each modality required the student to seek the intervention voluntarily. A recent study by the Director of Tutoring indicated that only 11% of the student population had contacted a tutor during the 22-23 academic year. A proposed intervention was considered to increase the number of students being exposed to tutor services and to determine if the impact of mandatory tutoring could be a viable solution for successfully completing a first-year writing course.

The quasi-experimental project included four sections of Communications-121 (COM-121), a first-year writing course. Two sections of COM-121 functioned as the experimental group. They were exposed to an independent variable of a mandatory tutoring requirement, and two sections of COM-121 functioned as the control group without being exposed to the independent variable. The experimental group was analyzed and compared to the control group and to ex-post facto data, including past sections of COM-121 from the fall of 2023. The fall sections included three sections of COM-121 that utilized an embedded tutor. All existing data from the fall of 2023 and the quasi-experimental sections from the spring of 2024 were supplied in an autonomous format by the Dean of Assessment, Research, and Planning.

Once the quasi-experimental study to collect quantitative data was created, a volunteer instructor agreed to teach four select courses of COM-121. The instructor's schedule included four sections of COM-121 that were held during the 15-week spring semester of 2024. The classes were held at 9 am, 10:30 am, 12 pm, and 1:30 pm on Tuesday and Thursday of each week. The spring 2024 experimental model was selected based on student enrollments in these four specific COM-121 sections. Each course had a cap of 24 students.

Students within the mandatory tutoring sections were required to participate in at least five thirty-minute sessions with a college-employed tutor. Students were also required to attend three sessions before mid-semester grades, with two more sessions expected by the end of the semester. The tutoring participation had a graded component in the courses as outlined in the course syllabus (Figure 5). Points were awarded for each completed tutoring session and calculated as part of the mid-term and final grades.

Tutoring sessions were one-on-one sessions in a face-to-face environment; however, students were permitted to use two sessions that were online, remote, or in the form of a drop-off service. This service allowed students to submit a paper to be reviewed, annotated by a tutor, and returned to the student for review. Students had to submit a summary of each session to the instructor, including a date and time stamp document from the tutoring center.

Figure 5

Grading Policy for Mandatory Tutoring Section

IV. GRADING POLICY

This course requires students to attend at least (5) face-to-face tutoring sessions in the tutoring center (Yocum 4th Floor). Two (2) of those sessions can be virtual tutoring.

A. Grading for COM-121 will be based on the following percentages for each essay project.

Personal Essay Project	20 percent
Synthesis Essay Project	15 percent
Research Essay Project	40 percent
Reflective Final essay	15 percent
Class Grade	5 percent
Tutoring Grade	5 percent
TOTAL:	100 percent

A post-semester quantitative survey was distributed to all students enrolled in the four spring 2024 sections of COM-121. One survey was distributed to the control group (Appendix A), and one survey was distributed to the experimental group (Appendix B). The survey for the experimental group asked Likert questions to determine if students saw value in the tutoring experience to improve writing, whether they would seek the help of a tutor in future courses, and how likely they were to recommend tutoring in the future. Students in the control group (no mandatory tutoring required) were asked how many times they had accessed the help of a tutor and whether they felt their writing had improved through the use of a tutor if they had voluntarily accessed one while taking the course.

Research Alignment to Intervention

The community college in Southeastern Pennsylvania was an open-access institute for all individuals seeking credit and non-credit programs for college advancement. All students enrolled in credit-bearing programs of study needed to achieve minimum grade requirements in all courses, including general education requirements in math and writing that are prerequisites for future coursework. Failure to complete these courses with a passing grade greatly impacted a student's persistence, especially if they needed to repeat general education courses in math and reading with two or more attempts.

While many variables contributed to a student's ability to complete a program, this study focused on a writing intervention of mandatory tutoring as one way to help students pass a required first-year writing course. This researcher served as the Dean of the Communications, Arts, and Humanities division of the community college, where a

first-year composition course was identified as a barrier course for students. An action research model and a literature review on mandatory tutoring were utilized to inform the plan for this study.

The literature review provided encouraging data on the positive impact of success rates for students who accessed tutoring; however, the research was limited in quantitative data for mandatory tutoring as a specific intervention. One recent study by Gray and Hoyt (2020) found that students using writing centers saw average grades of 2.94 compared to 1.60 for those not using the center. The average grade in the specific courses was 3.25 for students who used the center and 2.18 for students who opted not to use the center for support. Though minimal, this difference could elevate marginal students to a passing grade of a C or better in a barrier course. The research plan in this study was designed to provide additional quantitative data for the use of a mandatory tutoring requirement in barrier courses for writing.

The literature review also helped justify the consideration of a more invasive intervention to tutoring, such as a mandatory requirement for all students. This study addressed some of the stigmas and limitations of students, especially at-risk students, who chose not to use the free tutoring services available. Burns (2010) suggested that at-risk populations, including first-generation students or economically disadvantaged students, often lacked the self-efficacy to seek the help needed. Additional variables such as single parenting, older learners, full and part-time workers, or being personal caregivers for others contributed to students' availability and persistence in seeking the help of a tutor; in fact, 70% of community college students related to at least one of these

situations and 50% reported connecting with two or more of the variables (Barhoum, 2018; Burns, 2010; Fike, 2008; Martin et al., 2014).

Fiscal Implications

The primary budget costs for implementing a mandatory tutoring requirement for all Communications-121 (COM-121) students at the college would require hiring up to seven part-time tutors designated to service all COM-121 students in every section and form of modality, including face-to-face, remote, and online offerings. The quasi-experimental model used in this study was based on each COM-121 student in the experimental group receiving at least five 30-minute tutoring sessions per semester. If this model were fully implemented for future semesters, the fall and spring semesters would average about 600 enrolled students, and the summer term would service approximately 200 students for an estimated implementation cost of approximately $50,000.00. This cost is based on a tutor's salary of $25.00 per hour, including 2.5 tutoring hours per student or a cost of $62.50 per student.

This study was conducted during the spring 2024 semester. There were 21 students enrolled in one section of mandatory tutoring and 23 students enrolled in the second section. The intervention required five 30-minute tutoring sessions per student throughout the semester, or 220 tutoring sessions in total. This required approximately 110 tutoring hours at $25.00 per hour or a total expense of $2,750.00; however, the researcher was not charged for any additional hours of tutoring that the study generated.

Research Methods and Data Collection

Research Design

This study was conducted as a quantitative study with a quasi-experimental model and the inclusion of ex-post facto (archival) data from past semesters designed to analyze the cause and effect of a designated treatment to an experimental group and to test for causal relationships. Gay et al. (2009) argued that quantitative data "relies on the collection and analysis of numerical data to describe, explain, predict, or control variables and phenomena of interest" (as cited in Mertler 2022, p.107). This study examined mid-term and final grades, tutoring participation grades, ex-post facto data from previous semesters, and end-of-semester quantitative data from student surveys to determine the impact of a mandatory tutoring requirement for first-year writing students.

Data Collection Method and Timeline

ANOVA, Chi-square, paired sample T-test, and regression analysis were applied to SPSS statistic software with additional Google survey data using qualitative questions and Likert scales. The action research paradigm utilized a quantitative research method for data collection. The research model was considered a casual-comparative design using ex-post facto (archival) data from past semesters and data from a quasi-experimental project with a control group, which used a mandatory intervention for tutoring first-year composition students.

A post-semester quantitative survey was distributed to all students in the spring 2024 sections of Communications-121 used in the study. One survey was distributed to the control group (Appendix A), and one survey was distributed to the experimental group (Appendix B). Figure 6 represents a detailed alignment of information contained in this section. All data was obtained through RACC's Dean of Assessment, Research, and

Planning, and all data mining was distributed to the researcher using autonomous formats.

Figure 6

Alignment of Research Questions, Data Collection, Data Sources, and Timelines.

RESEARCH QUESTION(S)	TYPES OF DATA TO COLLECT	DATA SOURCES (detailed explanation of the types of data you will collect)	TIMELINE FOR COLLECTING DATA
1. What is the impact of mandatory tutoring requirements for increasing success rates in a first-year (barrier) writing course as measured by mid-term and final grades?	**quantitative**	Mid-term and final grades will be collected from 4 identified COM-121 Spring semester sections taught by the same instructor. Two sections are control groups, and two are treatment groups with a mandatory tutoring requirement. Anonymized data will be collected from the college's Dean of Assessment, Research, and Planning and will serve as Ex Post Facto data for the quasi-experimental study. Additional Ex Post Facto will be acquired from the Dean of Assessment, Research, and Planning to look at historical data on mid-term and final grades from additional COM-121 sections during the Fall 2023 semester.	Ex-Post Facto Data will be collected after the Spring semester on May 4, 2024. Historical data from the Fall 2023 semester will be collected by mid-Spring semester in March.
2. Is there a significant difference in writing proficiencies, as measured by course grades, between students who participate in mandatory tutoring and those who participate in voluntary tutoring, embedded tutoring, or those who never access tutoring services?	**quantitative**	Students write a total of three essays throughout the course, including a personal essay, a synthesis essay, and a research essay. First essay grades and final essay grades will also be considered as a subset of the mid-term and final grades. Student end-of-course surveys on tutoring use will also be analyzed for comparisons. Anonymized data will be collected from the college's Dean of Assessment, Research, and Planning for grades, and anonymous student surveys regarding the use of tutoring throughout the semester will also be collected at the end of the semester from the instructor of record for the 4 sections. Ex Post Facto Data will also be retrieved from the Director of Tutoring and Dean of Assessment about the use of embedded tutoring that was recently added for barrier courses (including COM-121) at the college.	Ex-Post Facto Data will be collected after the Spring semester on May 4, 2024. Student surveys will be collected from the instructor after the semester ends on May 4, 2024. Historical data from the Fall 2023 semester will be collected by mid-Spring semester in March

3.What is the relationship between at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates when enrolled in a first-year (barrier) writing course?	**quantitative**	Anonymized data will be collected from the college's Dean of Assessment, Research, and Planning and will serve as Ex Post Facto data for the quasi-experimental study. The data will contain grade distributions from the 4 identified sections and additional demographic information about the students that includes at-risk identifiers, ethnicity, and/or Pell Grant recipients as a measure of economically disadvantaged students.	Ex-Post Facto Data will be collected after the Spring semester on May 4, 2024.

IRB Approvals

IRB approvals were requested on August 4, 2023, for the study titled: The Impact of Success Rates When Mandatory Tutoring is Applied to a First-Semester Barrier Courses in Writing at a Two-Year Community College. An exempt status for the quantitative nature of the study was sought and approved by Pennsylvania Western University (Appendix C). An additional request was made to add two student surveys to the initial approval. This request was granted on February 3, 2024, and added to the proposal through the IRB at Pennsylvania Western University (Appendix D). Permission to study at the community college was also obtained from the Provost (Appendix E). Based on the study parameters, the IRB approved the study as an exempt project that did not require student consent.

Fiscal Implications to Research Method and Data Collection

The quasi-experimental model used in this study was based on each Communication 121 (COM-121) student in the experimental group receiving at least five 30-minute tutoring sessions per semester. The spring 2024 enrollment in the four COM-121 sections associated with this study was 78 students, consisting of 42 in the control group and 36 in the experimental group. The intervention required five 30-

minute tutoring sessions per student throughout the semester, or 220 tutoring sessions in total. This required approximately 110 tutoring hours at $25.00 per hour or a total expense of $2,750.00; however, the researcher was not charged for any additional hours of tutoring that the study generated.

Validity

Validity Types and Methods

Fraenkel et al. (2012) argued that "The critical point to remember is that validity refers to the degree to which evidence supports the inferences a researcher makes…the inferences are validated, not the instrument itself" (as cited in Mertler, 2022). Hendrick (2017) suggested that researchers needed to be aware of two important distinctions within the data produced in their action research. The action research needed to address both credibility and validity in the study through the use of four trustworthiness criteria: credibility, transferability, dependability, and conformability (p. 64). This action research study established both criteria through the following methods.

Credibility was established by ensuring that data sets were approached through a process of triangulation. It included using autonomous data collection provided by the college's Dean of Assessment, Research, and Planning. This included data sets from the spring 2024 quasi-experimental study and all ex-post facto/archival data from the fall 2023 semester. Additionally, the same instructor was used for comparison data in all four courses of the study and three additional ex-post facto sections of Communications-121 where the instructor previously used an embedded tutor. Using the same instructor ensured that data sets were not influenced by different approaches to curriculum, tutoring, or individual teaching styles.

Transferability was achieved by providing detailed descriptions of the research site and the unique environmental factors influencing student success through various at-risk factors and ethnicity/race. This information provided the means for duplication of the study for future research or relative comparisons to similar demographics and environmental conditions.

Finally, dependability was achieved through the use of the triangulation of data, as well as by providing a format that would allow for the findings to be replicated with other participants and settings of similar contexts for continued research of the capstone project. Confirmability was also achieved through triangulation of data and the steps taken to ensure that no bias existed on the researcher's part while analyzing data. Using the same instructor within all tutoring models helped achieve a fair and balanced perspective on the concepts explored throughout the study. Finally, student survey data was collected through electronic Google Surveys with qualitative questions to ensure the lack of researcher bias as vetted by the Pennsylvania Western University IRB (Appendix D).

Triangulation of Data

James-Warren et al. (2013) spoke about the need for data-informed decision-making and the use of a step-by-step process to ensure the integrity of the process. They promoted the use of a triangulation method to describe meaningful educational interventions by using multiple data points surrounding the same issue, and they encouraged looking for links between practice and the results of the data. Mertler (2020) inferred that triangulation does not automatically imply that three data points are required; in fact, the author suggested that a better identifier may be to call data collection

polyangulation, a term that would imply "more than one or many" (as cited in Mertler, 2022, p. 14). Mertler (2022) also asserted that data should be able to show that independent measures support the concept of agreement and do not contradict each other.

This study achieved the conditions of triangulation (polyangulation) through the use of several data points that included qualitative data from a quasi-experimental model involving four sections of Communications-121 (COM-121), quantitative survey data collected at the end of the semester from the four sections of COM-121 in the study, and the inclusion of ex-post facto (archival) data from past sections of COM-121. The data from each of these areas were used to answer the research questions that framed the study and to inform the recommendations and conclusions from the study.

Summary

The proposed intervention sought to develop a course tutoring model to increase the number of students accessing professional tutors in the English Lab to improve writing proficiencies and to improve course success rates. Many first-year writing students who enrolled in college courses could not meet the expectations of college-level writing, and they lacked the self-efficacy skills needed to seek additional help and support. Bandura (1977) argued that students who lack self-confidence will likely not seek advice and support mechanisms that can help them cope with feelings of inadequacy in tasks like writing. Increasing writing proficiencies and course success rates through a mandatory tutoring requirement was considered a consistent writing framework to be applied to all first-year Communications-121 (COM-121) courses at the college.

The community college in Southeastern Pennsylvania operated a walk-in tutoring model with no mandatory requirements to access professional tutors. Virtual tutoring and

a drop-off tutoring system were also in place; however, mandatory tutoring requirements were at the individual instructor's discretion for each course. The Director of Tutoring has recently implemented the use of embedded tutors in selected barrier courses as part of a Title V grant that included several sections of COM-121. This study focused on a mandatory tutoring component for select first-year writing sections and compared course success rates measured through mid-term and final grades between the various tutoring models available to all college students.

Chapter III described how a research plan was designed to consider one possible strategy to help increase course success rates, writing proficiencies, and retention in one of the top 10 barrier courses for the college. The results of the spring 2024 quasi-experimental study and ex post facto data from the fall of 2023 will be examined in the next chapter to determine if any significant results have been discovered that could help to implement new or restructured ways to offer tutoring services at the college. Tinto (1999) said, “Clearly, the most important condition that fosters student retention is learning. Students who learn are students who stay” (p. 29). It is crucial for the college to consider multiple variables associated with making a student’s college experience a successful endeavor, and this study may provide a window of opportunity toward that aspiration.

Chapter IV will examine various data statistic tools, including ANOVA, Chi-square, paired sample T-test, and regression models, to analyze and discuss the results from the quantitative data collected from a quasi-experimental intervention, ex-post facto data from past semesters, and student survey data.

CHAPTER IV

Data Analysis and Results

Community colleges throughout Pennsylvania operated with an open-access policy that guaranteed students access to the education they provide; however, they were also challenged with how to engage students in ways that could ensure student success and retention toward a goal of on-time graduation. Elfman (2023) reported on the challenges of an open-access policy in a post-pandemic environment that threatens open-access participation by the very individuals who need it the most, but who are unable to make education a priority due to a variety of reasons, including "finances, family, illness, lack of internet or inability to adapt to online learning" (p. 24). Elfman' s observations concerning the struggles in an open-access college environment helped shape this study's focus and define its purpose.

This action research study aimed to examine a specific strategy within an open-access environment that could help increase student retention through the successful completion of a first-year barrier course in writing. The study sought to determine if mandatory tutoring in a first-year writing course at a two-year community college in Southeastern Pennsylvania could positively impact course success rates and the key performance indicator (KPI) of student retention.

The study also sought to determine if there were significant differences in student academic success and retention based on a variety of demographic considerations and at-risk factors that could also be impacting course success rates in a barrier course. Tinto (2017) asserted that "…student retention has been shaped by theories that view student retention through the lens of institutional action and ask what institutions can do to retain their students" (p. 254). Tinto's seminal work in retention became the framework for the

study and the desire to explore potential strategies that could help all students find success on their first attempt at a barrier course in writing.

Many students failed the Communications-121 (COM-121) course on their first attempt and needed to repeat it two or three times before completing it. Passing COM-121 was essential for enrolling in future courses that required this course as a prerequisite. Failure to pass a first-year writing course had detrimental impacts on retention and on-time graduation rates, which are data points of the college's five-year Strategic Goals. This study considered how a mandatory tutoring requirement in an identified barrier course for writing could impact course success rates and thereby help with a student's retention and ability to achieve on-time graduation within three years. The following research questions were analyzed, and the results are discussed in this chapter.

1. What is the impact of mandatory tutoring requirements for increasing course success rates in a first-year (barrier) writing course as measured by mid-term and final grades?
2. Is there a significant difference in writing proficiencies, as measured by course grades, between students who participate in mandatory tutoring and those who participate in voluntary tutoring, embedded tutoring, or those who never access tutoring services?
3. What is the relationship between at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates when enrolled in a first-year (barrier) writing course?

Data Analysis

A quantitative research model was conducted to consider student outcomes based on mid-term and final grades within a Communication-121 (COM-121) course required of all first-year students. COM-121 was a first-year writing course that needed to be taken by all students in all programs offered at the college. It was also designated as one of the top 10 barrier courses at the college due to its low course success rates for completion. In 2022, the course success rates at the community college in Southeastern Pennsylvania were 62% for all COM-121 courses.

Data was collected from a quasi-experimental study conducted during the spring 2024 semester and from archival data from the fall 2023 semester. The data set included 144 students in seven sections of COM-121. There were 44 students in two sections of mandatory tutoring, 35 students in two sections of voluntary tutoring, and 65 students in three sections with an embedded tutor.

The quasi-experimental project included four sections of Communications-121 (COM-121). Two sections of COM-121 functioned as the experimental group. They were exposed to an independent variable of a mandatory tutoring requirement, and two sections of COM-121 functioned as the control group without being exposed to the independent variable. The experimental group was analyzed and compared to the control group, and ex-post facto data from three previous sections of COM-121 from the fall 2023 semester that included an embedded tutor. The Dean of Assessment, Research, and Planning, who manages all institutional research data and state and federal reporting, supplied all existing data in an autonomous format from the fall 2023 and spring 2024 semesters.

The quantitative data from the quasi-experimental study were carefully analyzed using various SPSS statistical models specifically chosen to accurately interpret the research questions. The key tools used in this process were ANOVA, Chi-square, paired sample T-test, and regression analysis. The results were discussed and were shared throughout the chapter. Additional quantitative data was collected through a voluntary Google Survey where Likert questions were used to help triangulate the data for the study. It's important to note that no survey results were available for the ex-post facto data from the three embedded tutoring courses taught during the fall 2023 semester, which may have implications for the study's findings.

Results

To answer the three research questions, specific data was required to examine participant demographics, including race/ethnicity, first-generation status, and Pell Grant recipient status. These demographics were analyzed for their potential relationship to learning outcomes based on mid-term and final grades within three different tutoring models: mandatory, embedded, and voluntary tutoring. A student survey was also analyzed to help triangulate the data and to determine student perceptions of tutoring and if learning transfer of tutoring practices will be considered for future courses. The results showed the following information:

Research Question One: What is the impact of mandatory tutoring requirements for increasing course success rates in a first-year (barrier) writing course as measured by mid-term and final grades?

Figure 7

Mid-term Grades: All Tutoring Models

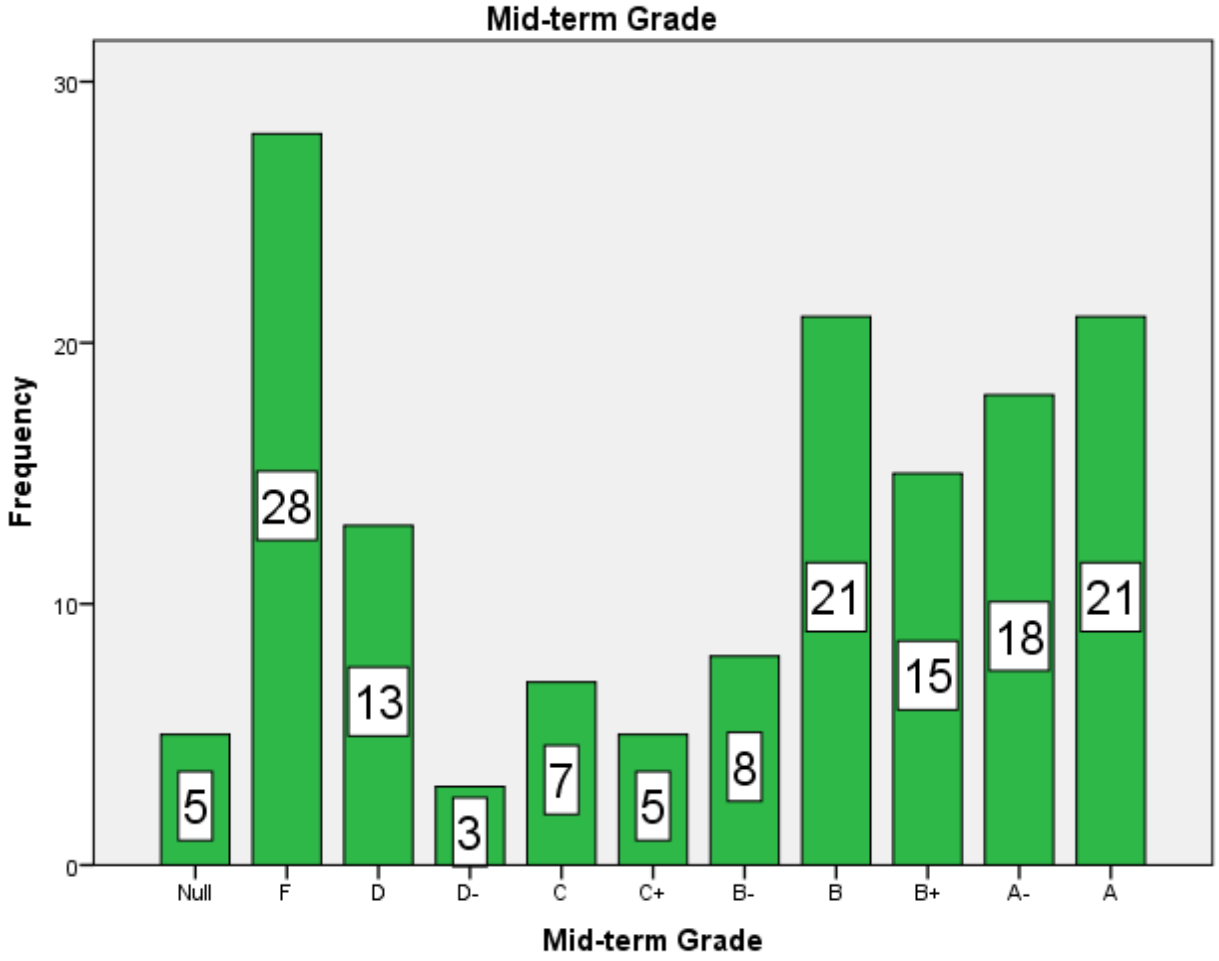


Figure 7 shows mid-term grades from students in all three tutoring models in the study. 28 students out of 144 scored an F in the mid-term test of the Communication-121 course. 21 students each scored grades A and B, 18 scored A-, 15 scored B+, 13 scored D, eight scored B-, seven scored C, five scored C+, and three students scored D-. Additionally, five students had null grades in the mid-term test. This distribution confirms that the majority of the students scored grade F while the lowest number of students scored D-. The overall success rate at the mid-term point, based on grades of an A, B, or C was 66%. Mandatory models were at 57% (Figure 8), voluntary models were at 80%

(Figure 9), and embedded models were at 65% (Figure 10). These results indicated that the best-performing tutoring model for course success rates at the mid-term point was for students who voluntarily accessed a tutor or did not utilize a tutor at all.

Figure 8

Mid-term Grades: Mandatory Tutoring Model

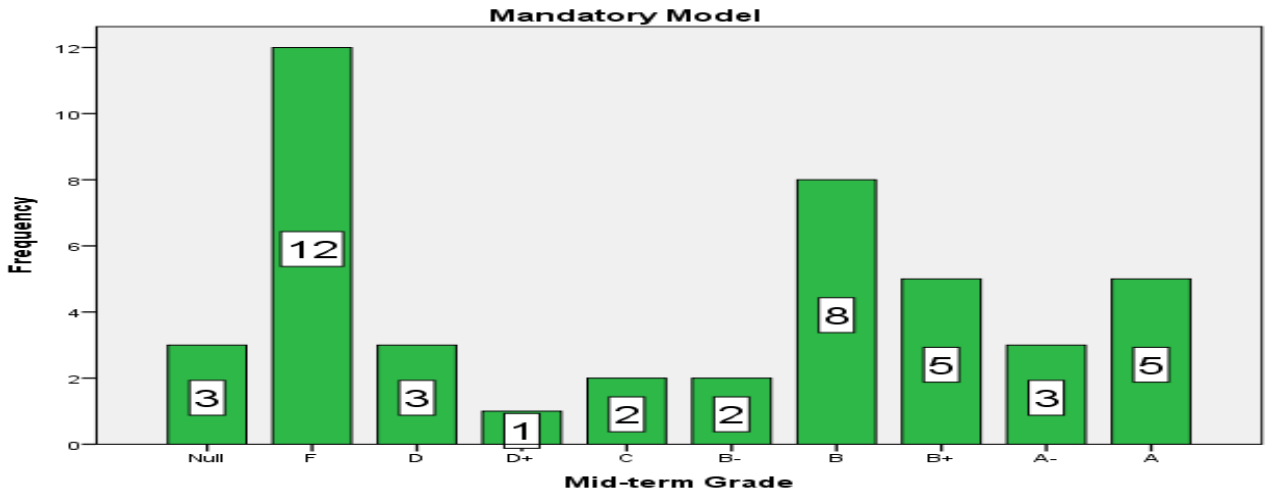


Figure 9

Mid-term Grades: Voluntary Tutoring Model

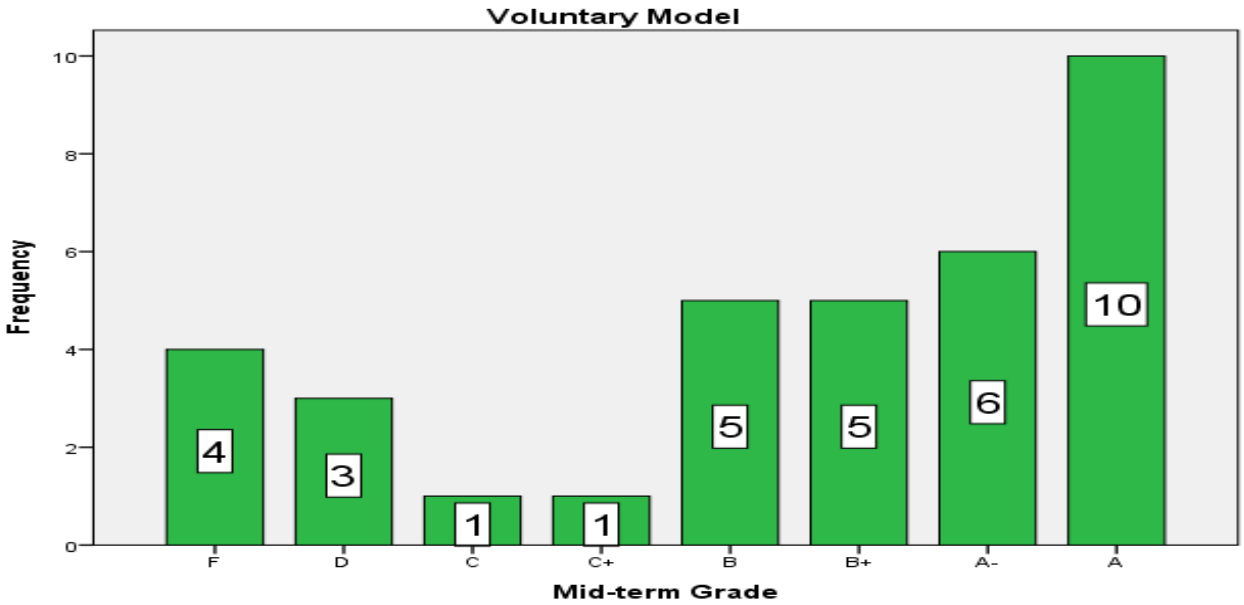


Figure 10

Mid-term Grades: Embedded Tutoring Model

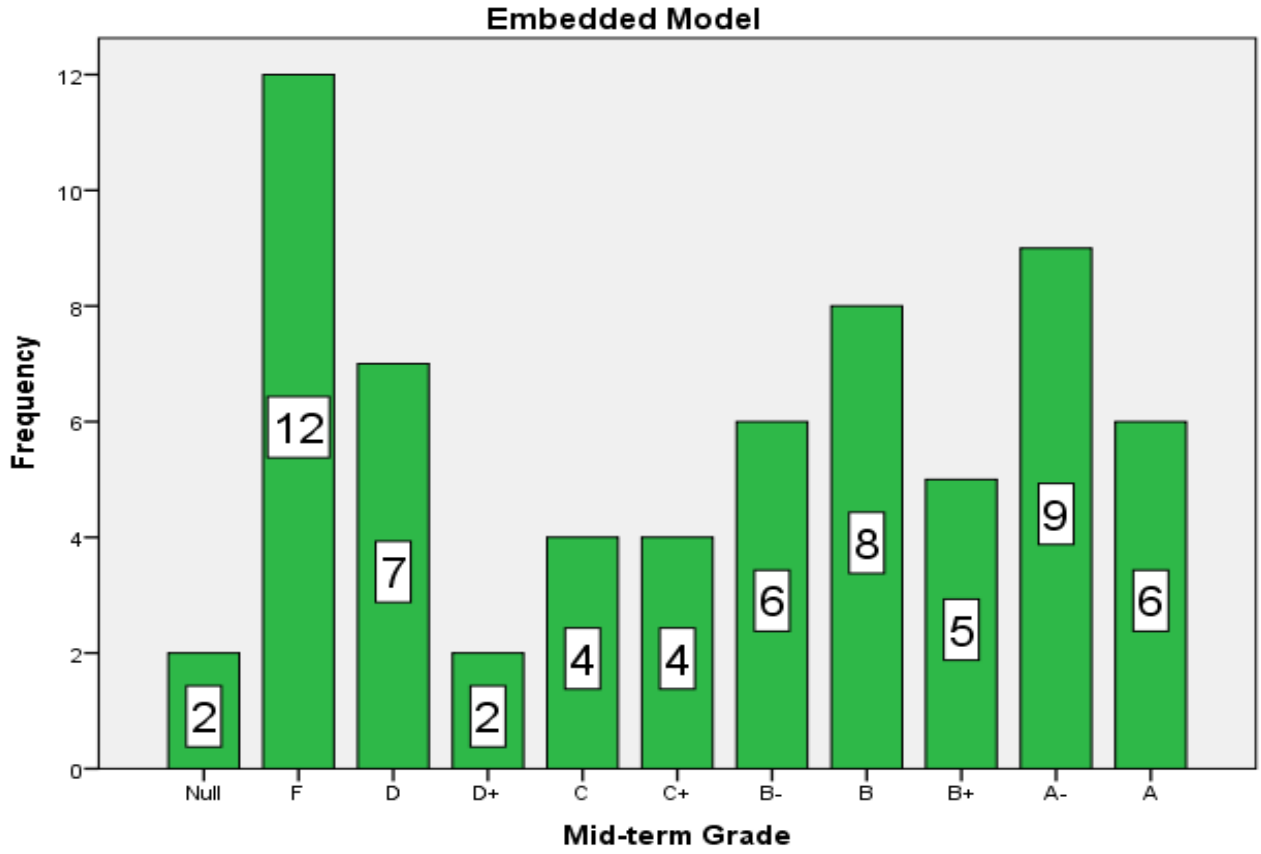


Figure 11

Final Grades: All Tutoring Models

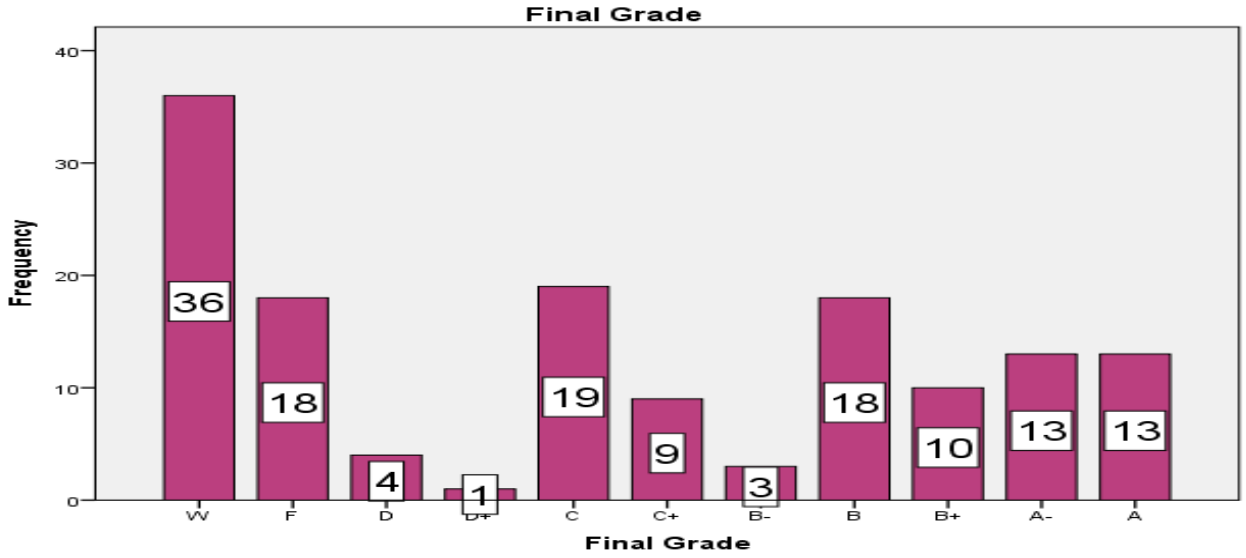


Figure 11 shows mid-term grades from students in all three tutoring models in the study. 36 out of 144 students withdrew from the study. 19 students scored C as their Final grade, 18 scored F and B, 13 scored A and A-, 10 scored B+, nine scored C+, four scored D, three scored B-, and one scored D+. This implied that a higher number of students withdrew from the study. Similarly, most students scored C as their final grade, while only one scored D+. The overall course success rate for final grades, based on grades of an A, B, or C was 59%. Mandatory models were at 50% (Figure 12), voluntary models were at 74% (Figure 13), and embedded models were at 62% (Figure 14). These results indicated that the best-performing tutoring model for course success rates at the final grade point was for students who voluntarily accessed a tutor or did not utilize a tutor at all.

Figure 12

Final Grades: Mandatory Tutoring Model

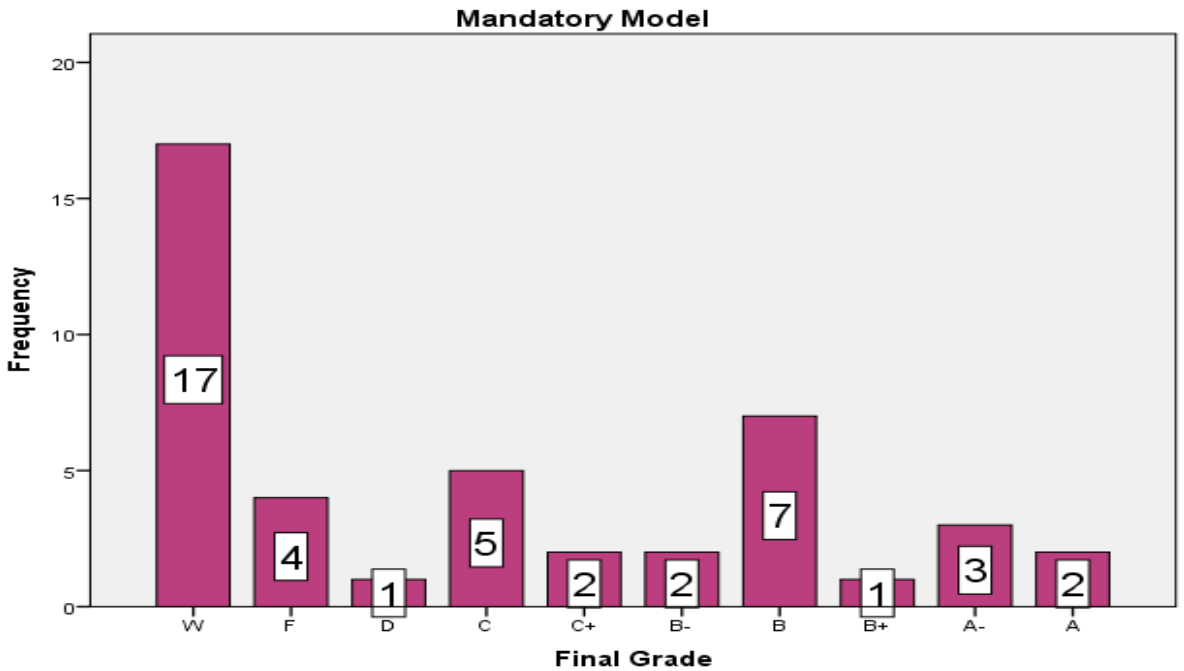


Figure 13

Final Grades: Voluntary Tutoring Model

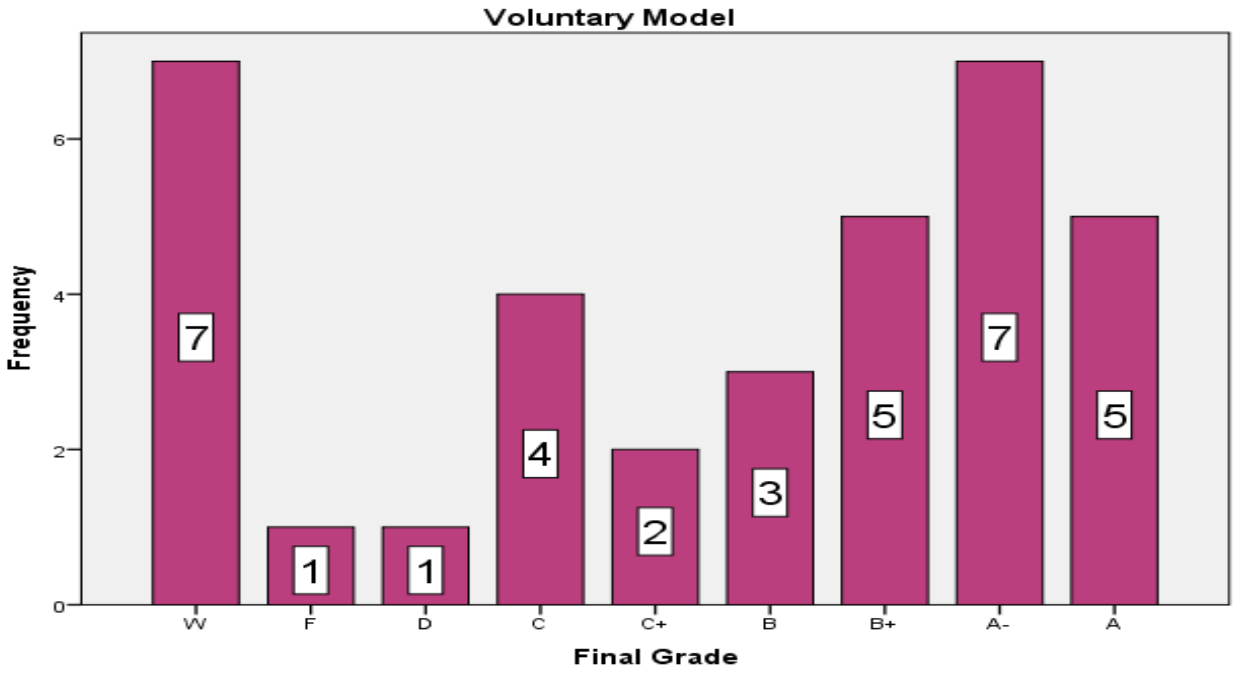


Figure 14

Final grades: Embedded Tutoring Model

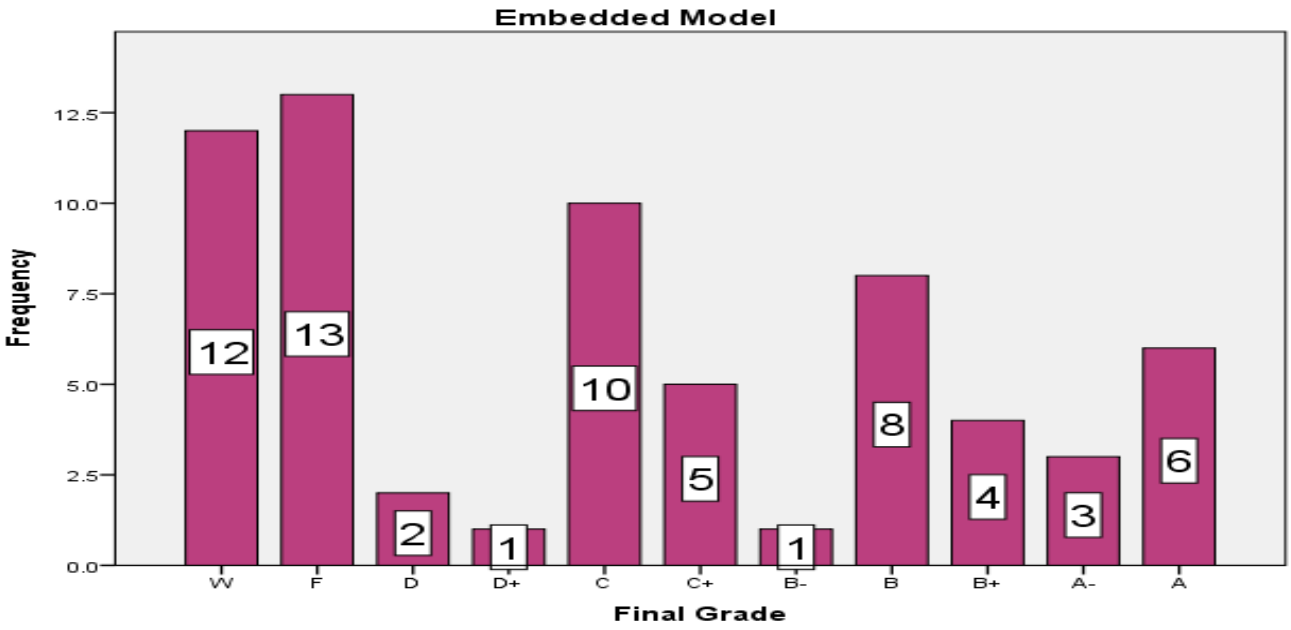


Table 3

Comparison Between Mandatory and Voluntary Models as Measured by Final Grades

	Statistics	
	Final Grades Mandatory Model	Final Grades Voluntary Model
N	44	35
Mean	3.95	6.54
Median	3.5	8.00
Mode	0	10

Note. Descriptive statistics

According to Table 3, the number of students who participated in the mandatory and voluntary model were 44 and 35, respectively. The mean final grade under the voluntary model was slightly higher than that of the mandatory model, as the voluntary model had a mean of 6.54, while the mandatory model had a mean of 3.95. The median final grade of the mandatory model was 3.5, while the median of the voluntary model had a median of 8.

Table 4

Frequency Comparison Between the Mandatory Model and Voluntary Model as Measured by Final Grades

	Mandatory Model		**Voluntary Model**	
Grade	**Frequency**	**Valid Percent**	**Frequency**	**Percent**
W	17	38.6	7	20.0
F	4	9.1	1	2.9
D	1	2.3	1	2.9
D+	0	0	0	0

C-	0	0	0	0
C	5	11.4	4	11.4
C+	2	4.5	2	5.7
B-	2	4.5	0	0
B	7	15.9	3	8.6
B+	1	2.3	5	14.3
A-	3	6.8	7	20.0
A	2	4.5	5	14.3
Total	44	100	35	100

Note. Frequency comparison

According to Table 4, most of the students under the mandatory model withdrew (*n=17*), while those under the voluntary model scored A- as the final grade with withdraws at (*n=7*). Only one student scored an F under the voluntary model, while four students student scored an F under the mandatory model. Moreover, more students scored A and A- as final grades under the voluntary model (*n=12*) than in the mandatory model (*n=5*). The observed impact was the high numbers of withdrawals in the mandatory and voluntary models. Also, there was a higher performance in the voluntary model than in the mandatory model as measured by the final grade. Additionally, few students scored an F under the voluntary model as compared to the mandatory model.

Table 5

Descriptive Statistics Comparison Between the Mandatory and Embedded Model as Measured by Final Grades

Statistics		
	Final Grades Mandatory model	Final Grades Embedded model
N	44	65
Mean	3.95	4.66
Median	3.5	5.00
Mode	0	1

Note. Descriptive statistics

According to Table 5, the number of students who participated in the mandatory and embedded model was 44 and 65, respectively. The mean final grade under the embedded model was slightly higher than the mandatory model, as the embedded model had a mean of 4.66, representing a C- final grade, while the mandatory model had a mean of 3.95, representing a D+ final grade. The median final grade of the mandatory model was 3.5, representing a grade of D+, while the median of the embedded model had a median of 5, representing a final grade of C. Additionally, the mode final grade of the mandatory model was zero, representing withdrawal, while in the embedded model, it was 1, representing a grade F.

Table 6

Frequency Comparison Between Mandatory Model and Embedded Model as Measured by Final Grades

	Mandatory Model		**Embedded Model**	
Grade	**Frequency**	**Valid Percent**	**Frequency**	**Percent**
W	17	38.6	12	18.5
F	4	9.1	13	20.0
D	1	2.3	2	3.1
D+	0	0	1	1.5
C-	0	0	0	0
C	5	11.4	10	15.4
C+	2	4.5	5	7.7
B-	2	4.5	1	1.5
B	7	15.9	8	12.3
B+	1	2.3	4	6.2
A-	3	6.8	3	4.6
A	2	4.5	6	9.2
Total	44	100	65	100

Note. Frequency comparison

According to Table 6, most of the students under the mandatory model withdrew (*n=17*), while those under the embedded model scored an F as the final grade (*n=13*).

Also, more students scored an F under the embedded model (*n=13*) than under the mandatory model (*n=4*) as measured by final grade. Most of the students scored A and A- as final grades under the embedded model (*n=9*) compared to the mandatory model (*n=5*). The impact was that there were more withdrawal cases in the mandatory model than in the embedded model. Similarly, as shown by the final grade recordings, the embedded model had a slightly higher performance than the mandatory model. Additionally, few students scored an F grade under the mandatory model compared to the embedded model, as specified in the final grades.

Research Question Two: Is there a significant difference in writing proficiencies, as measured by course grades, between students who participate in mandatory tutoring and those who participate in voluntary tutoring, embedded tutoring, or those who never access tutoring services?

ANOVA and T-tests were applied to study data to establish whether there was a significant difference in writing proficiencies, as measured by course grades between students who participated in mandatory tutoring and those who participated in other tutoring models.

Table 7

ANOVA Between Mandatory and Voluntary Tutoring as Measured by Mid-term Grades

ANOVA					
Midterm Grades Voluntary					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	147.177	9	16.353	1.418	.233
Within Groups	288.365	25	11.535		
Total	435.543	34			

Note. ANOVA

According to Table 7, a one-way ANOVA between the mandatory tutoring model and voluntary tutoring model as measured by the mid-term grade was (*F (9, 25) =1.418), P=0.233*). Since the P-value was more than an alpha value of 0.05 (*P=0.233>0.05*), it implied that there was a statistically significant difference in writing proficiencies between students who participated in the mandatory tutoring model and the voluntary tutoring model.

Table 8

ANOVA Between Mandatory and Embedded Tutoring as Measured by Mid-term Grades

ANOVA					
Mid-term Grades Embedded					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	159.852	9	17.761	1.245	.301
Within Groups	484.875	34	14.261		
Total	644.727	43			

Note. ANOVA

According to Table 8, a one-way ANOVA between the mandatory tutoring model and embedded tutoring model as measured by the mid-term grade was (*F (9, 34) =1.245), P=0.301*). Since the P-value was more than an alpha value of 0.05 (*P=0.301>0.05*), it implied that there was a statistically significant difference in writing proficiencies between students who participated in the mandatory tutoring model and the embedded tutoring model.

Table 9

ANOVA Between Mandatory and Voluntary Tutoring as Measured by Final Grades

ANOVA					
Final Grade Voluntary					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	326.519	9	36.280	3.569	.006
Within Groups	254.167	25	10.167		
Total	580.686	34			

Note. ANOVA

According to Table 9, a one-way ANOVA between the mandatory tutoring model and voluntary tutoring model as measured by the final grade was (*F (9, 25) =3.569), P=0.006*). Since the P-value was less than an alpha value of 0.05 (*P=0.006<0.05*), it implied that there was no statistically significant difference in writing proficiencies between students who participated in the mandatory tutoring model and voluntary tutoring model as measured by final grade.

Table 10

ANOVA Between Mandatory and Embedded Tutoring as Measured by Final Grades

ANOVA					
Final Grade Embedded					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	204.608	9	22.734	1.680	.132
Within Groups	460.120	34	13.533		
Total	664.727	43			

Note. ANOVA

According to Table 10, a one-way ANOVA between the mandatory tutoring model and embedded tutoring model as measured by the final grade was (*F (9, 34) =1.680),*

P=0.132). Since the P-value was more than an alpha value of 0.05 (*P=0.132>0.05*), it implied that there is a statistically significant difference in writing proficiencies between students who participated in the mandatory tutoring model and the embedded tutoring model as measured by final grade.

Overall, there was a statistically significant difference between mandatory, embedded, and voluntary as measured by mid-term grades based on ANOVA. Similarly, based on ANOVA, a statistically significant difference existed between the mandatory model and embedded model as measured by final grades. However, there was no statistically significant difference between the mandatory and voluntary models as measured by the final grade.

Table 11

Paired Sample T-test Between Mandatory and Voluntary Tutoring Models as Measured by Mid-term Grades

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Mid-term Grades Mandatory – Mid-term Grades Voluntary	-2.086	5.685	.961	-4.038	.133	-2.171	34	.037

According to Table 11, the paired sample T-test between the mandatory tutoring model and voluntary tutoring model as measured by the mid-term grade was (*t (34) =-2.171), P=0.037*). Since the P-value was less than an alpha value of 0.05 (*P=0.037<0.05*), the results implied that the mean difference in writing proficiencies

between students who participated in mandatory tutoring and voluntary tutoring model as measured by mid-term grade was statistically significant. This meant a statistically significant difference existed between students who participated in the mandatory and voluntary tutoring models as measured by mid-term grades.

Table 12

Paired Sample T-test Between Mandatory and Embedded Tutoring Model as Measured by Mid-term Grades

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Mid-term Grades Mandatory – Mid-term Grades Embedded	-.295	5.626	.848	-2.006	1.415	-.348	43	.729

According to Table 12, the paired sample T-test between the mandatory tutoring model and embedded tutoring model as measured by the mid-term grade was (*t (43) =-0.348), P=0.729*). Since the P-value was more than an alpha value of 0.05 (*P=0.729>0.05*), it implied that the mean difference in writing proficiencies between students who participated in the mandatory and embedded tutoring models as measured by mid-term grades was not statistically significant. This meant that no statistically significant difference existed between students who participated in the mandatory tutoring and embedded tutoring model as measured by mid-term grades.

Table 13

Paired Sample T-test Between Mandatory and Voluntary Tutoring as Measured by Final Grades

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Final Grades Mandatory – Final Grades Voluntary	-2.257	6.055	1.024	-4.337	.177	-2.205	34	.034

According to Table 13, the paired sample T-test between the mandatory tutoring model and voluntary tutoring model as measured by the final grade was (*t (34) =-2.205), P=0.034*). Since the P-value was less than an alpha value of 0.05 (*P=0.034<0.05*), it implied that the mean difference in writing proficiencies between students who participated in the mandatory and voluntary tutoring models as measured by final grade was statistically significant. The results showed that there was a statistically significant difference between students who participated in the mandatory tutoring model and the voluntary tutoring model as measured by final grades.

Table 14

Paired Sample T-test Between Mandatory and Embedded Tutoring as Measured by Final Grades

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Final Grades Mandatory – Final Grades Embedded	-.318	5.157	.777	-1.886	1.250	-.409	43	.684

According to Table 14, the paired sample T-test between the mandatory tutoring model and embedded tutoring model as measured by the final grade was (*t (43) =-0.409),*

P=0.684). Since the P-value was more than an alpha value of 0.05 (*P=0.684>0.05*), it implied that the mean difference in writing proficiencies between students who participated in the mandatory and embedded tutoring models as measured by final grade was not statistically significant. This indicated that there was no statistically significant difference between students who participated in the mandatory tutoring model and the embedded tutoring model as measured by final grade.

Overall, the paired sample t-test showed a significant difference between the mandatory and voluntary models, while there was no statistically significant difference between the mandatory and embedded models as measured by mid-term and final grades.

Research Question Three: What is the relationship between at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates when enrolled in a first-year (barrier) writing course?

The chi-square and regression tests were utilized to determine the relationship between at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates. The chi-square test showed whether the variables were associated, while regression showed R, which measured the degree of relationship between variables.

In total, 144 students from diverse backgrounds participated in this study. 49.31 percent of the students were Hispanic, 32.64 percent were white, 9.028 percent were Black or African American, 8.333 percent were categorized as having two or more races, and 0.694 percent were non-resident Aliens. This implied that the majority of the students who participated in the study were Hispanic, while the least were non-resident Aliens.

71.53 percent of the students who participated in the study were non-first-generation students, while 28.47 percent were first-generation students. This implied that there were more students with non-first-generation status than first-generation status students. 65.97 percent of the students involved in the study received Pell Grants, whereas 34.03 percent did not. This inferred that more students received Pell Grants that were awarded based on socioeconomic status

Table 15

Chi-square Test Between First-generation Status and Mandatory Tutoring as Measured by Success Rate

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.027[a]	1	.870		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.027	1	.870		
Fisher's Exact Test				1.000	.576
Linear-by-Linear Association	.026	1	.871		
N of Valid Cases	44				

a. 1 cells (25.0%) have an expected count of less than 5. The minimum expected count is 4.77.
b. Computed only for a 2x2 table

Note. Chi-square test

Since the basis of undertaking a chi-square test was measuring the association between variables, the only value the study reported was the Pearson Chi-Square. Therefore, based on Table 15, the Pearson Chi-Square test between first-generation status and mandatory tutoring as measured by success rate was $\chi\,(1) = 0.027, p = 0.870$.

Since the P-value was more than the alpha value of 0.05 (*p=0.870>0.05*), there was no statistically significant association between first-generation status and mandatory tutoring, as depicted by the success rate.

Table 16

Chi-square Test Between Pell-grant Status and Mandatory Tutoring as Measured by Success Rate

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.052[a]	1	.820		
Continuity Correction[b]	.000	1	1.000		
Likelihood Ratio	.052	1	.820		
Fisher's Exact Test				1.000	.533
Linear-by-Linear Association	.051	1	.822		
N of Valid Cases	44				

a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 7.64.
b. Computed only for a 2x2 table

Note. Chi-square

According to Table 16, the Pearson Chi-Square test between Pell Grant status and mandatory tutoring as measured by success rate was $\chi\,(1) = 0.052, p = 0.820$. Since the P-value was more than the alpha value of 0.05 (*p=0.820>0.05*), there was no statistically significant association between Pell status and mandatory tutoring as measured by success rate.

Table 17

Chi-square Test Between Ethnicity/race and Mandatory Tutoring as Measured by Success Rate

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.650[a]	3	.302
Likelihood Ratio	4.805	3	.187
Linear-by-Linear Association	.890	1	.345
N of Valid Cases	44		

a. 5 cells (62.5%) have an expected count of less than 5. The minimum expected count is 1.43.

Note. Chi-square test

According to Table 17, the Pearson Chi-Square test between ethnicity/race and mandatory tutoring as measured by success rate was $\chi\,(3) = 3.650, p = 0.302$. Since the P-value was more than the alpha value of 0.05 (*p=0.302>0.05*), there was no statistically significant association between ethnicity/race and mandatory tutoring as measured by success rate.

Table 18

Regression Between First-generation Status and Mandatory Tutoring as Measured by Success Rate

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.025[a]	.001	-.023	4.600

a. Predictors: (Constant), First-generation status

Note. Regression model Summary

Since this regression analysis table showed the value of R, which is the correlation that ascertains the relationship, other output tables were not utilized. Table 18 showed the correlation between first-generation status and mandatory tutoring as measured by a success rate of 0.025 (*R=0.025*). This implied that, even though there was a positive relationship between first-generation status and mandatory tutoring as measured by success rate, the degree of relationship was very low.

Table 19

Regression Between Pell Status and Mandatory Tutoring as Measured by Success Rate

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.034[a]	.001	-.023	4.598
a. Predictors: (Constant), Pell status				

Note. Regression model summary

According to Table 19, the correlation between Pell Grant status and mandatory tutoring as measured by a success rate of 0.034 (*R=0.034*). This implied that there was a positive relationship between Pell Grant status and mandatory tutoring, as measured by success rate. However, the degree of relationship was very low.

Overall, Chi-Square Tests showed no association between at-risk students (First-generation status, Pell Grant status, and ethnicity) and mandatory tutoring as measured by success rate. However, Regression analysis showed that there was a positive relationship between at-risk students and mandatory tutoring as measured by success rate, although the degree of relationship was very low.

Student Survey Data Results

This quantitative study sought to achieve triangulation through various data analyses, as presented in this chapter. One final data set came from a voluntary exit survey of students who were part of the quasi-experimental study in the spring of 2024. The brief survey sought to include a student voice perspective on tutoring through Likert questions and responses. It should be noted that this survey was not available to students in the embedded sections from the fall 2023 semester. The spring 2024 survey helped to reflect on the framework of learning transfer theory and whether students would continue to utilize tutoring beyond the barrier course of Communications-121. Student responses for the mandatory tutoring sections represented 22 of 44 students or a 50% return. Students from the voluntary tutoring sections represented 24 of 35 students or a 69% return.

Figure 15

Survey Results: Mandatory Tutoring Question One

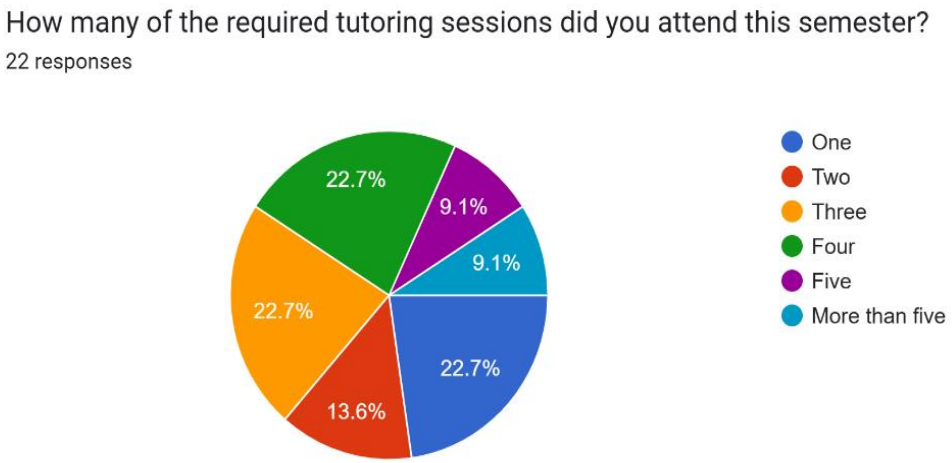


Figure 15 represents the number of mandatory tutoring sessions attended during the spring 2024 semester. 18.2 percent of the students met or exceeded the five required sessions, while 81.8 percent reported attending one to four sessions. This implied that 100 percent of the survey participants utilized tutoring services at some point over the course of the semester, but the majority did not complete the mandatory five tutoring sessions.

Figure 16

Survey Results: Mandatory Tutoring Question Two

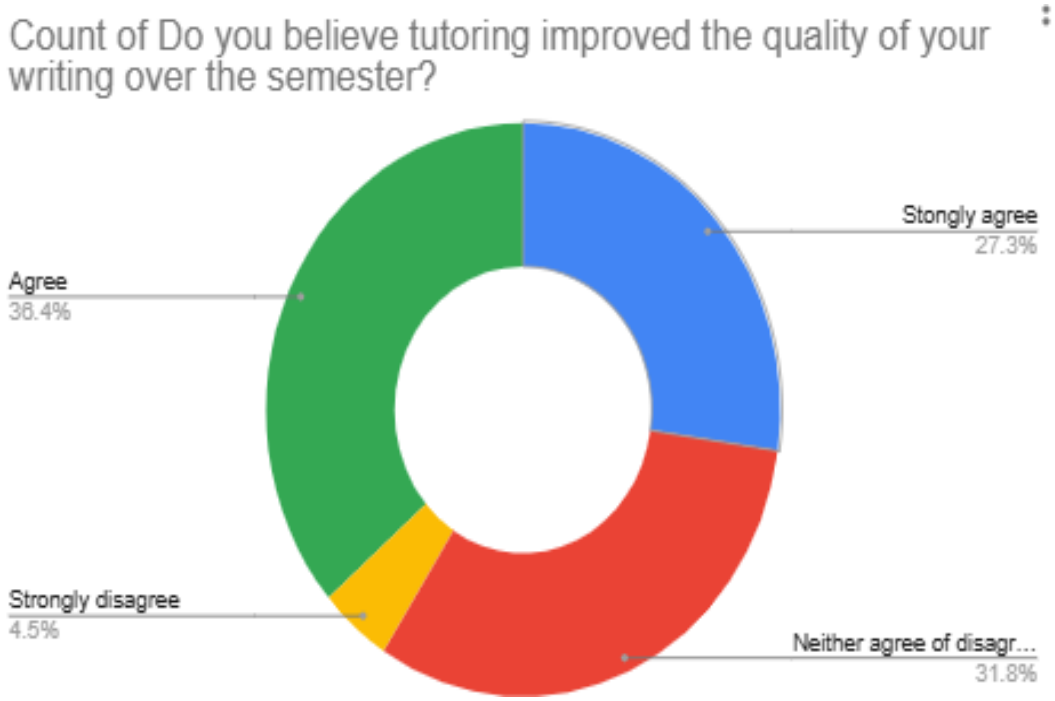


Figure 16 shows that 63.7 percent of students agree or strongly agree that tutoring improved the quality of their writing during the semester. 31.8 percent neither agree nor disagree that tutoring helps their writing, and 4.5 percent strongly disagree that tutoring improves their writing. This implied that most students believe tutoring improved the quality of their writing over the semester.

Figure 17

Survey Results: Mandatory Tutoring Question Three

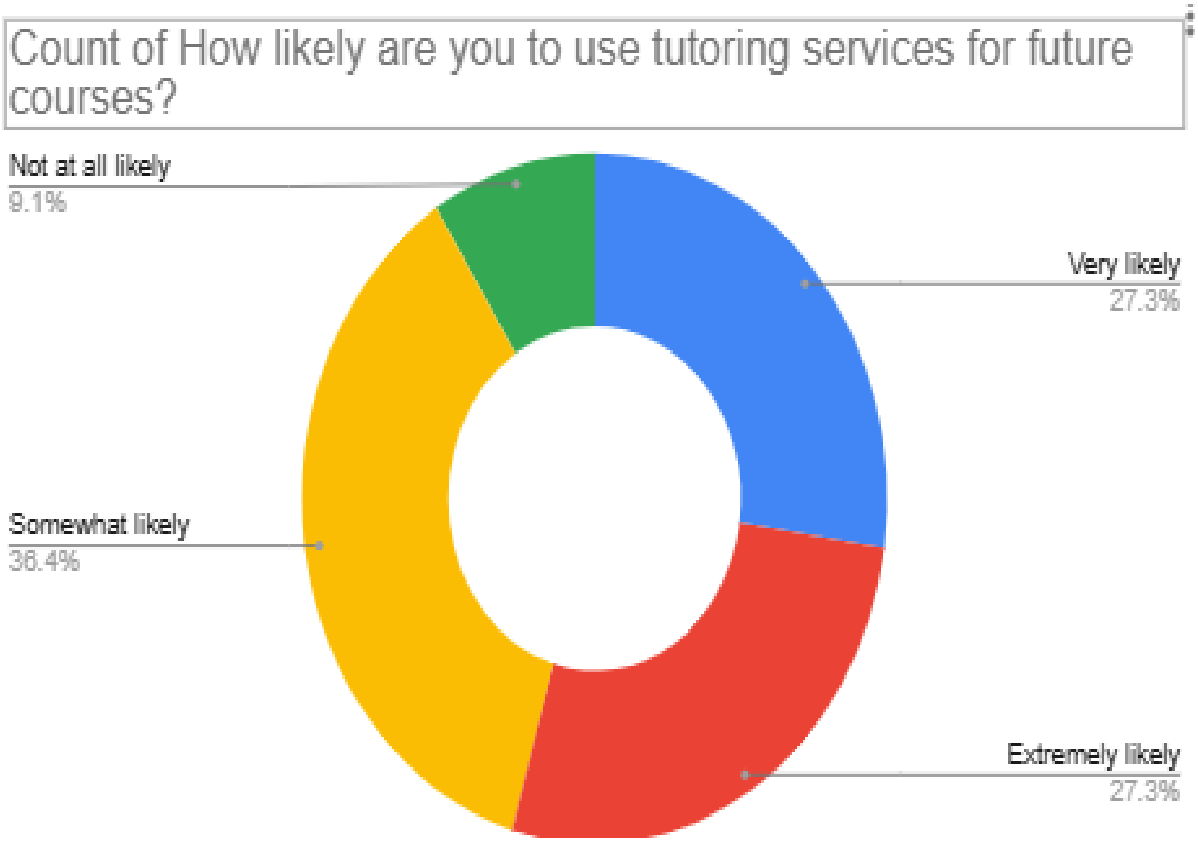


Figure 17 shows that 54.6 percent of students are very likely to extremely likely to use tutoring services for future courses, while 9.1 percent are not at all likely to use tutoring for future courses. 36.4 percent of students are somewhat likely to use tutoring. This implied that a majority of students will be inclined to access tutoring services for future course

Figure 18

Survey Results: Mandatory Tutoring Sections Question Four

Figure 18 shows that 69.1 percent of students are very likely to extremely likely to recommend tutoring to a classmate, while 4.5 percent are not at all likely to recommend tutoring to a classmate. 36.4 percent of students are somewhat likely to recommend tutoring to a classmate, which implied that most students would be inclined to recommend tutoring to a classmate.

Figure 19

Survey Results: Voluntary Tutoring Sections Question One

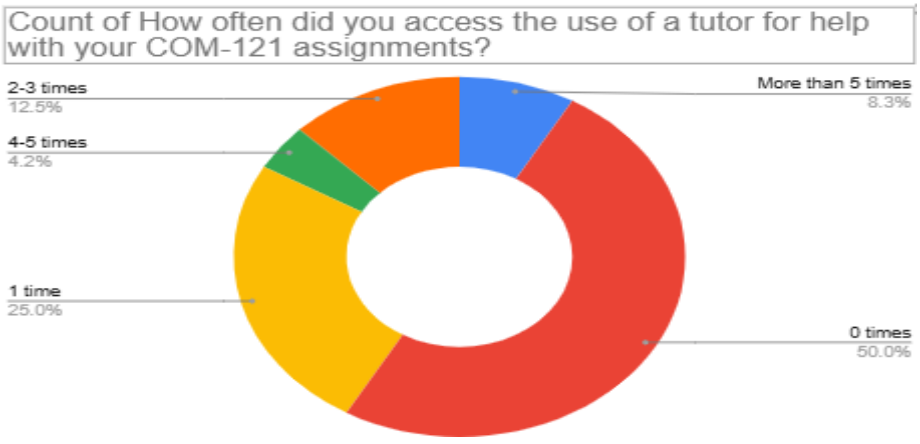


Figure 19 represents the number of voluntary tutoring sessions attended during the semester when no mandatory sessions were required. 50 percent of the students

attended 1, 2-3, or 4-5 sessions in the semester; however, 25 percent attended only one session. 50 percent of the students attended no tutoring session for the semester. This implied that half of the students in a voluntary tutoring section of Communications-121 sought the help of a tutor on their own.

Figure 20

Survey Results: Voluntary Tutoring Sections Question Two

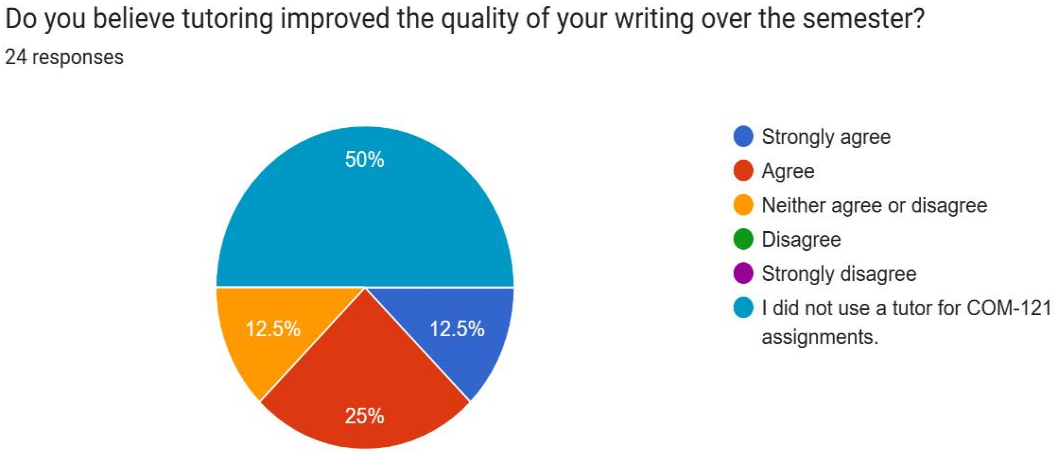


Figure 20 shows that 37.5 percent of the students who used a tutor during the semester agree or strongly agree that the quality of their writing improved. 12.5 percent neither agreed nor disagreed with whether their quality of writing had improved, and 50 percent of the students did not use a tutor during the semester. This implied that a majority of students who used a tutor within a voluntary tutor model believed that their writing improved over the semester.

Discussion

This action research study used a quantitative data collection process to determine if a mandatory tutoring intervention in a first-year Communication-121 (COM-121) barrier course could improve course success rates and ultimately help student retention

rates. The study included data sets from a quasi-experimental study of two COM-121 sections with a mandatory tutoring requirement and two sections of COM-121 with a voluntary approach to tutoring. Ex-post facto/archival data from three embedded tutoring sections were also considered. The same instructor was used for comparison data in all four courses of the spring 2024 study and the three additional ex-post facto sections of COM-121 from fall 2023. Data were collected to answer the following three research questions:

1. What is the impact of mandatory tutoring requirements for increasing course success rates in a first-year (barrier) writing course as measured by mid-term and final grades?
2. Is there a significant difference in writing proficiencies, as measured by course grades, between students who participate in mandatory tutoring and those who participate in voluntary tutoring, embedded tutoring, or those who never access tutoring services?
3. What is the relationship between at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates when enrolled in a first-year (barrier) writing course?

Research question one sought to determine the impact of mandatory tutoring as a potential intervention to increase course success rates. Mid-term and final grades were the only factors considered as data points in this study. Based on descriptive and comparison analytical models, the results showed that mandatory tutoring did not positively impact final grades. Course success rates for mid-term grades (measured by

mid-term grades of A, B, and C) included 57% for mandatory tutoring, 65% for embedded tutoring, and 80% for voluntary tutoring. Course success rates for final grades (measured by final grades of A, B, and C) included 50% for mandatory tutoring. 62% for embedded tutoring and 74% for voluntary tutoring. In considering the three tutoring models identified in this study, mandatory tutoring scored the lowest course success rates in both mid-term and final grades.

Based on mid-term and final grades, research question two used paired T-tests and ANOVA analytics to determine if a student's writing proficiencies improved based on the tutoring model used in a given course. Overall, there was a statistically significant difference between mandatory, embedded, and voluntary as measured by mid-term grades based on ANOVA. Similarly, based on ANOVA, a statistically significant difference existed between the mandatory model and embedded as measured by final grades. However, there was no statistically significant difference between the mandatory and voluntary models as measured by the final grade.

Research question three applied Chi-Square tests and Regression analysis to determine correlations between success rates, at-risk students (first-generation, economically disadvantaged, or ethnicity/race), and mandatory tutoring. Chi-Square Tests did not show any association between at-risk students (First-generation status, Pell Grant status, and ethnicity) and mandatory tutoring as measured by course success rates. However, Regression analysis showed a positive relationship between at-risk students and mandatory tutoring as measured by success rate, although the degree of relationship was very low.

Summary

Chapter IV has taken an extensive look at the data collected in an action research study that examined the intervention of various tutoring models in a Communications-121 first-year writing course, an identified barrier course at the college where the study was conducted. A mandatory tutoring approach was considered as an option to increase a student's writing proficiencies and their ability to complete the writing course successfully on the first attempt. Data from a quasi-experimental study in the spring 2024 semester and ex-post facto data from the fall 2023 semester were analyzed, and the results were presented in this chapter.

Chapter V will use the information from these results to draw conclusions and suggest recommendations for how these results may be used to further the discussion on student retention and student success rates in barrier courses at the college. Limitations to the study and their impact on the validity of the data will also be shared in an effort to refine, modify, and continue the cycle of action research required to best serve the students at the college and the unique circumstances they face as students in a community college environment

CHAPTER V

Conclusions and Recommendations

One of the most prevalent challenges that community colleges faced in increasing student retention and persistence came through their use of open-access enrollment. Raby (2020) referred to open access as "A foundational philosophy of the community college" (p. 41). This embedded philosophy is a cornerstone principle for all community colleges' charge to make education available to all students and that no individual will ever be denied access through a selective admissions process like is used by four-year institutes. A study by Rheinheimer et al. (2010) showed that tutoring was an overwhelmingly positive predictor of persistence, retention, and degree completion and claimed that tutoring was a valuable intervention for future academic success. This type of initial research became the impetus for considering a mandatory tutoring strategy to be applied to a Communication-121 writing course at a Southeastern Community College in Pennsylvania.

Communications-121 (COM-121) was a first-year writing course required of all community college students and considered one of the top 10 barrier courses. A barrier/gateway course was identified as a course with success rates of below 70% completion. COM-121 at the college was required of all incoming students and had a low success rate of 62% in 2022. This meant that 38% of the students were required to repeat and successfully complete the COM-121 course before moving on to other program courses that required COM-121 as a pre-requisite. Students who failed their first attempt at taking the COM-121 course needed to repeat the course two or three times before successful completion. Failure to pass a first-year writing course was considered a potential factor for detrimental impacts on retention, on-time graduation, and course

success rates. Measuring improvements in these key performance indicators was part of the college's five-year strategic goals and the justification for the study's focus.

Once a focus for the study was established, the following research questions were established within a quantitative study. The questions helped to determine if a mandatory tutoring requirement for first-year writing courses could have a positive impact on student success rates and retention:

1. What is the impact of mandatory tutoring requirements for increasing course success rates in a first-year (barrier) writing course as measured by mid-term and final grades?
2. Is there a significant difference in writing proficiencies, as measured by course grades, between students who participate in mandatory tutoring and those who participate in voluntary tutoring, embedded tutoring, or those who never access tutoring services?
3. What is the relationship between at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates when enrolled in a first-year (barrier) writing course?

Additional planning for the study included the identification of the following specific outcomes to be considered while answering the research questions:

1. To determine if the collected data supports the implementation of mandatory tutoring for all or some students of the COM-121 writing course
2. To analyze various tutoring practices and their impact on the successful completion of a barrier course based on mid-term and final grades

3. To recommend the implementation of some variation of mandatory tutoring for first-year writing students to increase student retention and on-time graduations
4. To determine if tutor relationships help students improve their self-efficacy as they transfer acquired knowledge to future program courses

This chapter will use the results from the research questions and outcomes to draw conclusions and suggest recommendations for using these results to further the discussion on student retention and success rates in barrier courses at the college. It will also share limitations to the study and how they impact the validity of the results.

Conclusions

Data was collected from a quasi-experimental study that included four sections of Communications-121 (COM-121) from the spring 2024 semester and ex-post facto data from three previous sections of COM-121 from the fall 2023 semester, which included an embedded tutor. The data set included 144 students in seven sections of COM-121. There were 44 students in two sections of mandatory tutoring, 35 students in two sections of voluntary tutoring, and 65 students in three sections with an embedded tutor.

Research Question One: What is the impact of mandatory tutoring requirements for increasing course success rates in a first-year (barrier) writing course as measured by mid-term and final grades?

To answer this question, mid-term and final grades were evaluated to determine the level of successful course completion that occurred by the end of the semester in each of the three tutoring models. Successful course completion was measured by students who achieved a final grade of A, B, or C. Withdraws and course grades of D and F were not considered successful completions. Using this metric, it was determined that a

mandatory tutoring requirement did not outperform the embedded tutoring model or the voluntary tutoring model; in fact, mandatory tutoring sections by the end of the semester had the lowest success rates of 50% compared to 62% for the embedded model, and 74% for the voluntary tutoring model. The mid-term grades showed similar results, with mandatory tutoring success rates of 57% compared to 65% for the embedded model and 80% for the voluntary tutoring model.

Based on this study, mandatory tutoring as an intervention did not increase the course success rates of students in a first-year writing course; however, it is interesting to note that mandatory and embedded turning rates both increased from mid-term grades to final grades, while the voluntary tutoring model decreased. Mandatory tutoring also had the most withdrawals by the end of the semester, with a 39% withdrawal rate compared to 18% for the embedded mode and 19% for the voluntary model.

The study also compared mandatory tutoring models in final grades between embedded models and mandatory versus voluntary models. The embedded model was slightly higher than the mandatory model, with a mean score of 4.66 compared to a mean score of 3.95 for mandatory tutoring. Additionally, a frequency comparison of grades showed that embedded tutoring models had more students receiving an A or A- grade; however, more students in the embedded model received final grades of F than those students in mandatory tutoring models. Frequencies for student withdrawals were 18.5 % for the embedded model compared to 38.6% for mandatory modules.

The mean final grades in voluntary tutoring models were also slightly higher than in the mandatory model, with a mean score of 6.54 compared to 3.95 for mandatory tutoring. Frequency grade comparisons showed that more students in the

voluntary model scored an A or A- for final grades. Additionally, fewer F grades were given to students in the voluntary model than in the mandatory model. Frequencies for student withdrawals were 20 % for the voluntary model compared to 38.6% for mandatory modules.

The triangulation of data points to address this research question indicated that the voluntary tutoring model in this study was shown to be the most successful model for increasing course success rates by the end of the semester. Mandatory tutoring was the least effective model for increasing success rates; however, it also had the highest number of student withdrawals. This variable will be discussed in more detail under the limitations section of this chapter.

Research Question Two: Is there a significant difference in writing proficiencies, as measured by course grades, between students who participate in mandatory tutoring and those who participate in voluntary tutoring, embedded tutoring, or those who never access tutoring services?

To answer this question, final grades were evaluated to determine the writing proficiencies achieved by the end of the semester. This did not include individual essay grades throughout the course. The question looked at the end results based on the applied tutoring model of mandatory tutoring, embedded tutoring, or voluntary tutoring.

It is important to note that 36 of the 144 students who initially began their writing course withdrew before the end of the course. Of the remaining 108 students, 85 reached a level of writing proficiency to pass the course successfully. This included 28 grades of C, 31 of B, and 26 of A. These final grades indicated that 78% of the students who completed the course achieved an acceptable level of writing proficiency. Students who

completed the mandatory tutoring model had 81% writing proficiency, while the embedded model was 70%, and the voluntary model was 93%.

This research question addressed the writing proficiencies of students who remained in the course for the entire semester and received course grades of A, B, C, D, or F. It does not address success rates that included students who withdrew from the course and impacted the course completion statistics. Based on this metric, This research question addressed the writing proficiencies of students who remained in the course for the entire semester and received course grades of A, B, C, D, or F. This starkly contrasted the success rates for mandatory tutoring at 50% versus the voluntary model at 74% when withdrawals are included. Students who remained in the course had a 70-plus percent chance of meeting a successful writing proficiency level, which will also ensure successful completion of the Communication-121 barrier course for first-year writing.

ANOVA testing used to help answer this question included all final grades and indicated that there is a statistically significant difference between the mandatory model and embedded as measured by final grades. However, there was no statistically significant difference between the mandatory and voluntary models as measured by the final grade.

The paired T-test data showed the paired sample T-test between the mandatory tutoring model and voluntary tutoring model as measured by the final grade was (*(t (34) =-2.205), P=0.034*). Since the P-value was less than an alpha value of 0.05 (*P=0.034<0.05*), it implied that the mean difference in writing proficiencies between students who participated in the mandatory tutoring model and voluntary tutoring model as measured by final grade is statistically significant. The paired sample T-test between

the mandatory tutoring model and embedded tutoring model as measured by the final grade was (*t (43) =-0.409), P=0.684*). Since the P-value was more than an alpha value of 0.05 (*P=0.684>0.05*), it implied that the mean difference in writing proficiencies between students who participated in the mandatory and embedded tutoring models as measured by final grade was not statistically significant. Overall, the paired sample t-test shows there was a significant difference between the mandatory and voluntary models, while there was no statistically significant difference between the mandatory and embedded models as measured by mid-term and final grades.

Similar to the course success rate data, the voluntary tutoring approach performed the best, followed by mandatory tutoring and embedded tutoring. The one notable difference was that the mandatory tutoring model was shown to be the second-best indicator for writing proficiency for students who completed the course.

Research Question Three: What is the relationship between at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates when enrolled in a first-year (barrier) writing course?

This research question concerned the correlations of demographic data and the impact of a mandatory tutoring model for the Communication-121 barrier course for writing. This was particularly interesting to the college due to its designation as a Hispanic Serving Institute (HIS) and a community college with large populations of first-generation and economically disadvantaged students who received Pell Grants. Pearson Chi-square tests were used to show whether variables are associated, and regressions measured the degree of relationship between variables.

The Pearson Chi-Square test between first-generation status and mandatory tutoring as measured by course success rate was $\chi\,(1) = 0.027, p = 0.870$. Since the P-value was more than the alpha value of 0.05 (*p=0.870>0.05*), there was no statistically significant association between first-generation status and mandatory tutoring, as depicted by the success rate. The correlation between first-generation status and mandatory tutoring as measured by success rate was 0.025 (*R=0.025*). This implied a positive relationship existed between first-generation status and mandatory tutoring as measured by course success rates; however, the degree of relationship was very low.

The Pearson Chi-Square test between Pell Grant status and mandatory tutoring as measured by success rate was $\chi(1) = 0.052, p = 0.820$. Since the P-value was more than the alpha value of 0.05 (*p=0.820>0.05*), there was no statistically significant association between Pell status and mandatory tutoring as measured by success rate. The correlation between Pell Grant status and mandatory tutoring, measured by course success rate, was 0.034 (*R=0.034*). This implied that there is a positive relationship between Pell Grant status and mandatory tutoring as measured by course success rates; however, the degree of relationship was very low.

The Pearson Chi-Square test between ethnicity/race and mandatory tutoring as measured by course success rate was $\chi\,(3) = 3.650, p = 0.302$. Since the P-value was more than the alpha value of 0.05 (*p=0.302>0.05*), there was no statistically significant association between ethnicity/race and mandatory tutoring as measured by success rate. The correlation between ethnicity/race and mandatory tutoring as measured by success rate was 0.144 (*R=0.144*). This implies that there was a positive relationship between

ethnicity/race and mandatory tutoring as measured by success rate. However, the degree of relationship was very low.

Overall, Chi-Square Tests have shown no association between at-risk students (First-generation status, Pell Grant status, and ethnicity) and mandatory tutoring as measured by success rate. However, Regression analysis has shown that there is a positive relationship between at-risk students and mandatory tutoring as measured by success rate. Although the degree of relationship was very low, a larger sample size could address this at-risk factor as a future area of interest.

Future Application and Financial Implications of Study Results

This study considered implementing a mandatory tutoring requirement as an intervention for the Communication-121 (COM-121) barrier courses for first-year writing students. This strategy was designed to increase retention through course success rates and to improve writing proficiencies. Data was collected from three types of tutoring models: mandatory, embedded, and voluntary. Results showed that the mandatory tutoring model was the least effective in this study; however, the results will be used to continue discussions and intervention strategies that involve tutoring models and help inform the Director of Tutoring Services at the college. The college used Title V grant funding for many of the tutoring initiatives at the college, including the use of funds for embedded tutoring in barrier courses across multiple disciplines.

The results will be used to recognize the impact of student withdrawals (W) on their ability to complete a course successfully. This study focused on an intervention to help students academically succeed by the end of the semester through tutoring options; however, the study showed that tutoring in any form could not impact students who

withdrew from the course before its completion. This suggested that more conversations are needed to consider interventions that can prevent students from withdrawing from a barrier course. Currently, the reasons for a student's decision to withdraw from a course are not tracked and shared with faculty members. Finding ways to mitigate the number of withdrawals before the student self-initiates a course drop could significantly increase success rates and retention factors. Preventing a withdrawal could give interventions like tutoring a better chance of positively impacting course success rates, student retention, and writing proficiencies.

The tutoring intervention that this study considered could have significant financial implications if put into practice as a mandatory option. The primary budget costs for implementing a mandatory tutoring requirement for all COM-121 students would require hiring up to seven part-time tutors designated to service all COM-121 students in every section and form of modality, including face-to-face, remote, and online offerings. The quasi-experimental model used in this study was based on each COM-121 student receiving a minimum of five 30-minute tutoring sessions per semester. The fall and spring semesters averaged about 600 enrolled students, and the summer term serviced approximately 200 students for an estimated implementation cost of approximately $50,000.00. This cost was based on a tutor's salary of $25.00 per hour, including 2.5 tutoring hours per student or a student cost of $62.50 per semester.

Limitations

This action research project was limited by several factors that may have impacted the overall results. The first limitation involved the study's sample size, which was limited to seven sections across two semesters. 144 students registered for

Communications-121 (COM-121) sections without any knowledge of the type of tutoring used in the course. Sections were randomly selected based on one faculty member's course load from the spring semesters of 2024. Based on the random enrollment of the courses, there was no guarantee that all of the at-risk and ethnic groups to be included in the study would be represented.

The study was also limited by the data points analyzed to determine the results of each research question. Only mid-term and final grades were collected; however, these grades represent all assessments throughout the course, not just each of the three required writing assignments in a COM-121 course. This worked well for the course success rate data but was not as useful in determining if writing proficiencies increased throughout the semester. Using grades from the three required writing assignments and their rough drafts may have provided more valid data for the results in this area.

One final limitation that emerged when analyzing the data was the number of student withdrawals from each section of the study. The college was required to report students who withdrew from a course as having failed to complete it. This similarly affects students who remain in the course and receive a grade less than C as a final grade. Course success rates measure the number of students who finished the course with grades of an A, B, or C. Students who withdrew from a course or had a final grade of D or F counted against a faculty member's course success rate data for each section taught. Students may have withdrawn from courses for various reasons, but that data was not collected in this study. Contributing factors may have been conflicts due to family emergencies, financial issues, work conflicts, or other life-related issues. This unknown variable may have helped to understand why there was such a large number of

withdrawals from the mandatory sections and if the mandatory requirement played a role in the student's decision to withdraw.

Table 20 shows the significant difference in course success rates when the withdraw (w) grades are removed from the results. The mandatory tutoring model, minus withdraws, showed success rates of 81%, which outperformed the embedded model by 11%. The voluntary tutoring model was still the best tutoring model at 93%. The implications of these results showed that more attention needs to be focused on preventing student withdrawals from happening in the first place. The baseline for course success rates in this study was 62% for all sections of COM-121 taught during the 2022-23 semesters. With withdrawals included in the success rate formula for this 2023-24 study, the mandatory and embedded models fell below 62%, and the voluntary model exceeded the baseline by 12%. When withdrawals were not a determining factor for course success rates, all three models showed scores above 62%. Once again, the voluntary model was the best-performing model, with embedded tutoring being the lowest-performing model.

Table 20

Success Rates Including and Excluding Withdraws

Model	N Count	Success Rates A, B, & C Grades	Completed D, F Grades	Withdraws Before Completion	Success Rates with Withdraws	Success Rates Without Withdraws
Mandatory	44	50%	11%	39%	50%	81%
Voluntary	35	74%	7%	19%	74%	93%
Embedded	65	57%	25%	18%	57%	70%

Recommendations for Future Research

This study did not produce results that suggested implementing a mandatory tutoring model for all students; however, this study, combined with information obtained through the literature review, did support tutoring as an intervention to increase course success rates, retention, and writing proficiencies. Future research may be needed to expand upon the *very low* (but important) *relationships* that were found between at-risk students and mandatory tutoring. The new research may need to move from a quantitative study to a mixed-method design that could capture student and faculty data to better understand why different tutoring models produce different student outcomes and why students withdrew from the Communictions-121 (COM-121) barrier course. Other considerations should be addressed, such as the COM-121 curriculum and the consistency of course delivery based on individual teaching styles and levels of student engagement.

Further consideration should also be centered on finding solutions to mitigate the number of students withdrawing from a course before its completion. Tutoring was the predominant form of academic support available to students on campus, but according to the Director of Tutoring Services, the number of students who took advantage of this help is limited. Only about 11% of the enrolled students took advantage of the free services from the tutoring center. New or future interventions could include a tutoring variable to be implemented for any student who shows early signs of struggles that could lead to a student withdrawal if not addressed. This could include a tiered intervention system, such as any student who falls below a C average must attend tutoring sessions until their grade improves, or a student with a failing mid-term grade must attend tutoring sessions until

their grade increases by a defined percent. This would allow a differentiated approach to tutoring that would address the most vulnerable students in jeopardy of failing.

The embedded tutoring model, which was the second most effective tutoring strategy, should also be evaluated to consider ways to make the embedded model have a mandatory component based on the tiered intervention system. Embedded tutors at the college were able to access student grades, monitor progress, and review late assignment to reach out to students proactively. They were also present in the classroom as a student resource during instruction and when students were given in-class time for writing. The embedded tutors emailed students to encourage them to make appointments and were available before and after class for questions; however, the current model did not require students to use the embedded tutor as a resource. The embedded model could be modified to force an intervention at designated time frames or specified grade ranges. Embedded tutoring may be the best proactive model to help prevent a student from withdrawing, especially if writing is not a strength for the student or if they have low self-confidence or self-efficacy for seeking help. Embedded tutors were limited in the number of COM-121 sections assigned to them; however, using embedded tutors in all sections of COM-121 may need to be considered.

Finally, future studies on tutoring interventions should consider the quantitative data collected from student surveys during the quasi-experimental component of this study. That data showed that students who used tutoring as a resource overwhelmingly believed that it helped their writing and that they would recommend tutoring to other students. They also stated that they believed tutoring improved the quality of their writing, and they would be inclined to use tutoring for future courses. This information

showed that tutoring is making a difference for the students who accessed the free services available to them at the college. This data suggested that ongoing reflection and modifications to those services should remain a strong focus for the future.

Summary

This chapter has been a reflective process in determining the conclusions that can be drawn from a qualitative action research study that focused on using a mandatory tutoring requirement for first-year writing students. Communications-121 (COM-121) was a required writing course for all students at a two-year community college in Southeastern Pennsylvania, and passing with a C or better grade was necessary to continue taking courses that required COM-121 as a pre-requisite. The journey in the development of this study began with a basic needs assessment that isolated a problem area at the college. The needs assessment determined that 38% of all students taking COM-121, a top-ten barrier course for the college, failed to pass the course on their first attempt. A tutoring intervention to help increase course success rates, retention, and writing proficiencies for students was considered and implemented in a quasi-experimental study for the spring 2024 semester.

An initial review of existing research revealed several key factors that became the focus of the action research and included 1) tutoring was shown to have positive impacts on student success, 2) students often did not access tutoring due to fear of showing weakness, 3) students lacked self-efficacy to help themselves, 4) students who failed barrier courses lead to retention issues, and 5) community colleges had unique challenges for educating students due to open-access practices.

All of these key factors suggested a framework based on Tinto (1975) and his seminal research in retention. Tinto (2017) was a strong voice in the area of persistence with his assertion that "…student retention has been shaped by theories that view student retention through the lens of institutional action and ask what institutions can do to retain their students. Students, however, do not seek to be retained. They seek to persist" (p. 254). This action research study was built on Tinto's belief that there needed to be strong institutional support for students to improve their self-efficacy, to belong to a community, and to have supportive resources for helping students. All of these conditions were met within this study.

The conclusions of this particular study did not support the premise that a mandatory tutoring component would be the best intervention to apply for increasing course success rates, student retention, or writing proficiencies; however, limitations to the study may have influenced the outcomes of the results, particularly because of the impact from student withdraws. A student's reason for a course withdrawal may range from personal issues to a fear of writing or because the section has a mandatory tutoring requirement. However, when withdrawals were removed from the data, the mandatory turning model showed an 81% course success rate but was still second to the voluntary tutoring model with a 93% course success rate. Embedded models were 70%.

The data obtained through the student exit surveys from the quasi-experimental study were telling. Tutoring positively impacted students who chose to use the resources provided by the college. They were building sustainable relationships with a professional staff member that helped them to grow self-efficacy skills and to transfer the knowledge they received to other courses throughout their college career. The students recognized

the positive benefits of using the college's tutoring services, and they overwhelmingly said they would use tutoring again in other courses and would recommend tutoring to their classmates. Whatever model is used, the tutoring process can change a student's academic trajectory, contribute strongly to a student's academic proficiency, and contribute to positive retention practices that will help ensure increased course success rates, retention, writing proficiencies, and on-time graduation at the community college level.

Finally, this action research study has helped this researcher, who is new to the community college environment, gain tremendous respect for the role community colleges play in the education and advancement of students in Pennsylvania. Community colleges and their use of open access for all students have required them to be strong community partners with the flexibility and autonomy to create programs and technical training that meet the needs of all community members. The community college used in this study embraced four hallmarks at the core of a comprehensive community college: hope, access, opportunity, and excellence. Responding to the needs of students and the community was at the cornerstone of this action research study, and the data collected will help to ensure that the philosophy represented by the four hallmarks will continue through the use of the systematic process of action research and the repeating cycles of reflection, action, and evaluation.

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APPENDICES

Appendix A

Student Survey: Control Group

Student Survey: COM-121

* Indicates required question

1. Please select your course section from the Dropbox. *

   Mark only one oval.

   - ◯ COM-121-3231
   - ◯ COM-121-3221

2. Pleases select which semester you are currently in at RACC. *

   Mark only one oval.

   - ◯ First
   - ◯ Second
   - ◯ Third
   - ◯ Fourth

3. How often did you access the use of a tutor for help with your COM-121 assignments? *

   Mark only one oval.

   - ◯ 0 times
   - ◯ 1 time
   - ◯ 2-3 times
   - ◯ 4-5 times
   - ◯ More than 5 times

4. Do you believe tutoring improved the quality of your writing over the semester? *

   Mark only one oval.

   - ◯ Strongly agree
   - ◯ Agree
   - ◯ Neither agree or disagree
   - ◯ Disagree
   - ◯ Strongly disagree
   - ◯ I did not use a tutor for COM-121 assignments.

Appendix B

Student Survey: Experimental Group

Student Survey - Tutoring

End of course survey: COM-121

* Indicates required question

1. Please select your course section from the Dropbox. *

Mark only one oval.

- ◯ COM-121-3211
- ◯ COM-121-3221

2. Pleases select which semester you are currently in at RACC. *

Mark only one oval.

- ◯ First
- ◯ Second
- ◯ Third
- ◯ Fourth
- ◯ Other

3. How many of the required tutoring sessions did you attend this semester? *

Mark only one oval.

- ◯ One
- ◯ Two
- ◯ Three
- ◯ Four
- ◯ Five
- ◯ More than five

4. Do you believe tutoring improved the quality of your writing over the semester? *

Mark only one oval.

- ◯ Stongly agree
- ◯ Agree
- ◯ Neither agree of disagree
- ◯ Disagree
- ◯ Strongly disagree

5. How likely are you to use tutoring services for future courses? *

Mark only one oval.

- ◯ Extremely likely
- ◯ Very likely
- ◯ Somewhat likely
- ◯ Not so likely
- ◯ Not at all likely

6. How likely are you to recommend tutoring to your classmates? *

Mark only one oval.

- ◯ Extremely likely
- ◯ Very likely
- ◯ Somewhat likely
- ◯ Not so likely
- ◯ Not at all likely

Appendix C

IRB Approval Letter – Pennsylvania Western University

PennWest UNIVERSITY

Institutional Review Board
250 University Avenue
California, PA 15419
instreviewboard@calu.edu
Melissa Sovak, Ph.D.

Dear Brian Schell,

Please consider this email as official notification that your proposal titled "The Impact of Student Success Rates When Mandatory Tutoring is Applied to a First-Semester Barrier Courses in Writing at a Two-Year Community College" (Proposal #PW23-020) has been approved by the Pennsylvania Western University Institutional Review Board as submitted.

The effective date of approval is 08/17/2023 and the expiration date is 08/16/2024. These dates must appear on the consent form.

Please note that Federal Policy requires that you notify the IRB promptly regarding any of the following:

(1) Any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented)

(2) Any events that affect the safety or well-being of subjects

(3) Any modifications of your study or other responses that are necessitated by any events reported in (2).

(4) To continue your research beyond the approval expiration date of 08/16/2024, you must file additional information to be considered for continuing review. Please contact instreviewboard@calu.edu

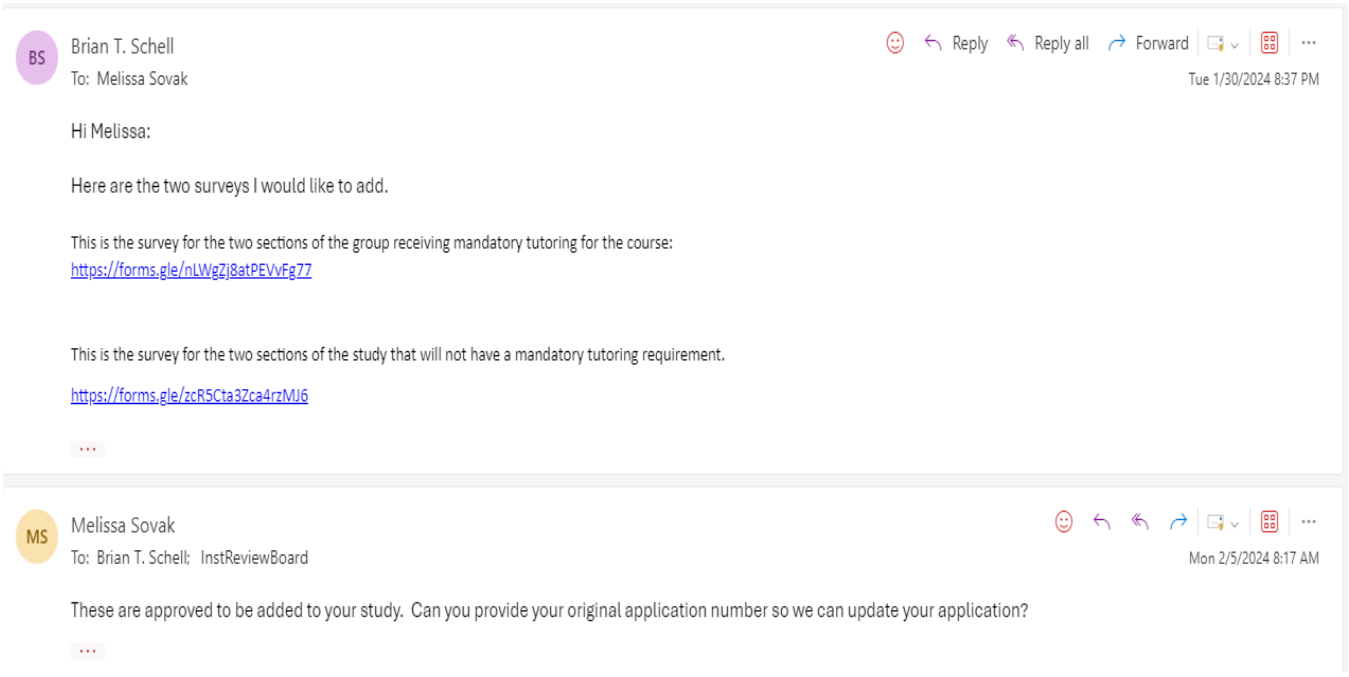
Please notify the Board when data collection is complete.

Regards,

Melissa Sovak, PhD.
Chair, Institutional Review Board

Appendix D

Confirmation Email for the Addition of Two Student Surveys



BS Brian T. Schell

To: Melissa Sovak

Reply Reply all Forward

Tue 1/30/2024 8:37 PM

Hi Melissa:

Here are the two surveys I would like to add.

This is the survey for the two sections of the group receiving mandatory tutoring for the course:
https://forms.gle/nLWgZj8atPEVvFg77

This is the survey for the two sections of the study that will not have a mandatory tutoring requirement.

https://forms.gle/zcR5Cta3Zca4rzMJ6

...

MS Melissa Sovak

To: Brian T. Schell; InstReviewBoard

Mon 2/5/2024 8:17 AM

These are approved to be added to your study. Can you provide your original application number so we can update your application?

...

Appendix E

Permission Letter Reading Area Community College

READING AREA COMMUNITY COLLEGE

Provost Cynthia J. Seaman
Senior Vice President of Academic Affairs
Reading Area Community College
Phone: 610.607.6271
Email: cseaman@racc.edu

Brian T. Schell, Dean
Communications, Arts, and Humanities Division
Reading Area Community College
Reading. PA 198603

7-30-2023

Dear Brian T. Schell:

I have reviewed the proposed study entitled, "The Impact of Student Success Rates When Mandatory Tutoring is Applied to First-Semester Barrier Courses in Writing at a Two-Year Community College." I understand that the principal investigator is Brian T. Schell, a doctoral learner who will operate under supervision of Pennsylvania Western University faculty. I understand that the purpose of the study is to address the following research questions:

1. What is the impact of mandatory tutoring requirements for increasing success rates in a first-year writing course as measured by mid-term and final grades?
2. Is there a significant difference in writing proficiencies, as measured by course grades, between students who participate in mandatory tutoring and those who participate in voluntary tutoring, embedded tutoring, or those who never access tutoring services?
3. What is the relationship of at-risk students (first-generation, economically disadvantaged, or ethnicity/race) and mandatory tutoring as measured by success rates when enrolled in a Communications (COM-121) writing courses?

I understand the research will focus on institutional ex post facto (archival) data from past semesters as well as existing data from a quasi-experimental project with a control group using a mandatory intervention for tutoring of first year composition students. I have granted permission for the following research activities:

1

- Data collection from formerly conducted COM-121 sections.
- Embedded tutoring data from previous semesters
- Collection of archival and demographic data through the Dean of Assessment, Research, and Planning.
- The implementation of a quasi-experimental study.

I confirm that I have the authority to grant such permission on behalf of reading Area Community College.

I understand this project will begin once Brian T. Schell has obtained approval from PennWest University's Institutional Review Board (IRB).

I understand no project will occur prior to IRB approval from PennWest University. Brian T. Schell is responsible for the preservation of the privacy of research participants. Research participants will not be named in the doctoral paper. Research participants will not be described in such a way that they will be identifiable. If there are concerns about this site permission, please contact me at the phone number or email address listed.

Sincerely,

Provost Cynthia J. Seaman
Senior Vice President of Academic Affairs
Reading Area Community College
Phone: 610.607.6271
Email: cseaman@racc.edu