ABSTRACT

Travis Bulluck, DOES THE DELIVERY METHOD OF FIRST-YEAR EXPERIENCE COURSES AFFECT STUDENT SUCCESS? (Under the direction of Dr. David Siegel). Department of Educational Leadership, July 2023.

As state budgets are continuously tightened, and state dollars dwindle to cover only the bare necessities, resources must be carefully examined and utilized to increase efficiency and effectiveness; one such area in which higher education institutions must concentrate on allocating and streamlining resources is to increase the retention and graduation of students (Goldrick-Rab, 2010; Keup, 2014; Rabovsky, 2012). In considering how to most effectively allocate an institution's limited funds in tandem with supporting and increasing students' academic success, an institution must assess what assists students in the most significant manner. One area where a return on investment is clear is through the implementation of First-Year Experience (FYE) courses. In addition to utilizing FYEs as a vehicle to increase students' academic success, institutions are also attempting to diversify their methods for reaching more students by offering FYEs in an online or remote format. Online or remote learning, also known more formally as distance education (DE), or distance learning, is becoming increasingly common in higher education, allowing for cost savings and greater engagement with more students (Bettinger et al., 2017; Samson & Granath, 2004). This study aims for a better understanding of the impact of one FYE course on student success– College Transfer Success (ACA 122) – in the North Carolina Community College System. The overarching research question guiding the study is whether the instructional method (face-to-face, DE, or hybrid) of FYE courses used by North Carolina community colleges is associated with measures of student success. A better understanding of the impact of the instructional method of this course offers NC community colleges data that may be used to provide additional support to those enrolled in

one modality or another and justify the allocation of institutional resources. The results of this study can guide leadership at NC community colleges on course offerings and provide insight into the relationship between course modality on degree completion.

DOES THE DELIVERY METHOD OF FIRST-YEAR EXPERIENCE COURSES AFFECT STUDENT SUCCESS?

A Dissertation
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The Faculty of the Department of Educational Leadership
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Doctor of Education in Educational Leadership

By
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DEDICATION

To my family by the grace of God.

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CHAPTER 1: INTRODUCTION

First-Year Experience (FYE) courses present an advantage for both the students enrolled in those courses and the institutions that offer them. These courses are often referred to as University 101, Freshman Seminar, Transition 101, Introduction to College, Academic Success, and Student Success Seminar. These courses are generally referenced as FYE courses from this point forward. All FYEs have a common purpose: to develop students on multiple levels and implement strategies that seek to increase student development, retention, and degree completion (Black et al., 2016). The FYE course is appealing to many institutions, as an FYE course is not exclusive to one type of institution in higher education; rather, it is commonly found at institutions across the entire United States, including two-year institutions, four-year institutions (also referred to as a senior institution), for-profit, nonprofit, and public and private institutions (Goldrick-Rab, 2010; Samson & Granath, 2004; Spann, 2000). FYE classes provide a consistent method in which to engage directly with students and increase opportunities for students to connect and become more involved with their institution. As a result, students learn about available institutional services and resources, which further aid the students' academic success across all courses (Bers & Younger, 2014; Ryan et al., 2016).

Today, the typical community college student does not fit the traditional student model of enrolling full-time immediately upon graduation from high school and attending classes exclusively face-to-face; instead, these students are often enrolled part-time, work part or full-time, are older, and frequently complete their courses online (Lipka, 2013; Ortagus, 2017). These student characteristics are rapidly growing across the United States. Therefore, an examination is necessary as community colleges adjust their course offerings and provide more online instruction for programs. The examination can lead to a better understanding of modality, and

this impact on student success can assist community colleges in supporting their students (Kemp, 2002; Lipka, 2013; Ortagus, 2017).

Background of the Study

Economic changes, limited budgets, and increasing costs of attendance are pushing the use of distance education (DE) at institutions (Brown & Freeman, 2010; D'Amico et al., 2017; Liu et al., 2020). Institutions are adjusting to increase enrollment numbers and ensure continued existence. These adjustments target specific student populations — such as online learners, working adults, and active or prior military — by offering educational programs that serve a particular need of the community. Target populations or industrial partners often pursue such programs due to a preference for a particular instructional method, such as online, night, or weekend courses (Attiq-Ur-Rehman & Rahman, 2012; Barefoot, 2008; Grummon, 2010). The need to increase instruction of FYE courses face-to-face and via distance education (hereinafter, DE) is growing, but the instructional methods for the DE type of class may provide inconsistent results, depending on the students enrolled in the course (DE or face-to-face). Prior to COVID-19, an educational study found that nearly 70% of students enrolled at a community college had taken an online class within the previous year, and 54% of students enrolled at a four-year college enrolled in an online class in the last year (Kim & Bonk, 2006). COVID-19 led many institutions to only offer online courses, and therefore those students have enrolled in and completed online courses as a result of the pandemic (NC Community Colleges, 2015). Gaining a better understanding of the needs of each of these student populations and the ability for these groups to be retained more efficiently will improve success for students and the productivity of institutions (Bettinger et al., 2017).

Problem Statement

ACA 122 is the NC Community College System's FYE course offered to students who intend to transfer or transition to a senior institution. The NC Community College System Office's course description for ACA states that the course provides information and strategies to assist students in developing clear academic and professional goals beyond the community college experience. Additionally, topics in ACA 122 include the North Carolina Comprehensive Articulation Agreement (CAA), which governs the transfer of credits between NC community colleges and NC public universities and provides guarantees to the transferring student within the NC Community College System. As seen in Appendix B, additional topics covered are college policies, major and career exploration, academic planning, critical thinking, and communications skills to assist the student in a successful academic transition to a 4-year institution (Course Information, n.d.). There are no restrictions for enrollment based on modality, but students are encouraged to complete the class within the first two semesters of enrollment. Students who enroll in online FYE courses have a positive advantage in retention and degree completion (Shi et al., 2021). However, a better understanding of the instructional modality's impact better equips institutions with areas for improvement and growth. A lack of connection with an institution early in a student's academic career decreases the likelihood of student success (Keup, 2014). ACA offers this connection and makes a positive impact on degree completion through increased connection with the campus and a better understanding of campus resources and policies, but a better understanding of modality can further support students. ACA 122 is a required FYE course in the North Carolina Community College System; however, the instructional method in which the class is delivered is not uniform. Specifically, the problem with the variation in the delivery method is that the North Carolina System Office does not collect data on the

instructional method's impact on students enrolled in the course. The system office does record enrollment, modality, success rate (grades of A, B, C, or Passing) of the course, and withdrawal rates, but they do not provide data on retention and program completion associated with ACA 122 or course modality.

Furthermore, the NC Community College System office states that a best practice is for students to complete ACA 122 within the first two semesters of enrollment and listed as a required course in many of those curricula. Having an indicator of student success early in the academic career of many of these degree types can better inform institutions of outcomes at the time of degree completion. Again, ACA 122 is required for many of the degrees within the Community College System: Associate in Arts (AA), Associate in Engineering (AE), Associate in Applied Science, General Occupational Technology (AAS), Associate in Fine Arts (AFA), Associate in General Education (AGE), and Associate in Science (AS), but could also be completed by a student if they were to change their program of study. A breakdown of the different degree types is found in Appendix C.

As a result, an examination is necessary to understand the impact the delivery method of ACA 122 has in relation to students' success. Such as examination could aid in determining whether the instructional method of FYE courses at the community college level impacts the likelihood of a student completing the degree at the community college, as well as whether the instructional method (face-to-face or DE) of an FYE course affects a student's final GPA. The impact of the instructional method at North Carolina's Community College System Office is unknown; if the impact is better understood, state initiatives can be established. At the conclusion of this study, we were able to deduce whether the instructional modality is a predictor

of student success at the community college level. Insight into this population and the potential impact of instructional modality can benefit community college retention and persistence.

Purpose of the Study

The impact of the instructional method of ACA 122 on enrolled students is unknown at the state level, so a better understanding of the instructional method on transition courses is needed to make advancements in instruction or support students completing courses at the NC Community College level. This quantitative study compared students enrolled in face-to-face and DE sections of an FYE course (ACA 122) at selected NC Community Colleges: Pitt Community College (PCC) and Southwestern Community College (SCC). These two community colleges were selected by this student for three primary reasons. The first reason is location: PCC is located in the eastern region of the state, and SCC is located in the state's western region. Studying the populations in the eastern and western regions of the state allows two-year institutions to establish connections based on their understanding of the needs of region they serve. A second reason for selecting these two institutions is student enrollment. In 2019 (the final year of ACA 122 data collection in this study), the total enrollment of SCC was 4,618 (37 out of 58 NC Community Colleges), and PCC's total enrollment was 12,269 (9 out of 58 NC Community Colleges). The size of PCC allows the results to be connected with the seven larger community colleges in NC and scaled to medium-sized NC community colleges. The small to medium size of SCC, 37 out of 58, allows the results to be scaled to smaller institutions within the system. The third reason is that both institutions offered ACA 122 face-to-face and online. Understanding the impact on the instructional method of students who complete the course across the state allows for an increased understanding of course delivery on student success. This

study aimed to examine the impact instructional method has on the success (final GPA) of students completing ACA 122.

This quantitative approach analyzed data on the success rates of students who completed an FYE course at these community colleges. Additional research provides a better understanding of the impact instructional method has on ACA 122 and the success rates of students enrolled. This study determined that there is a significant correlation between instructional methods and the success of students completing ACA 122 between 2014 and 2019. Examining those students enrolled within this timeframe allows for a timely graduation from completing the course in 2019 and degree completion at the community college level in 2021.

Research Questions

The research questions in this study aimed to provide insight into the impact the instructional method used in ACA 122 has on students in completing their degree and transferring to a 4-year institution and in their academic performance at the time of degree completion or at the time of transfer to a 4-year institution. The research question (RQ) guiding this study was:

Does the instructional method of FYE courses at the community college impact a student's success at the community college? Success is measured in terms of degree completion within two years and three years from first enrolling in ACA 122, final GPA at the time of degree completion, or transfer to a 4-year institution and GPA at the time of transfer.

I use two hypotheses to further measure the impact of the instructional modality of ACA 122 at PCC and SCC:

- H_1: Students who enroll in ACA 122 offered in a face-to-face instructional format are more likely than those who complete the class in an online format to complete a degree at the community college or transfer to a 4-year institution.
- H_2: Students who enroll in ACA 122 via face-to-face instruction will have a higher GPA at the time of completing their degree (AA, AS, AAS, AE, AFA, or AE degree) or transfer to a 4-year institution when compared to those who complete the class in an online format.

The independent variables in this study were course modalities (face-to-face, online, and hybrid) of ACA 122. The dependent variables were degree completion, transfer to a 4-year institution, and GPA at the time of degree completion or transfer. This study's independent variables (instructional modality) aided in understanding the impact of the dependent variables (degree completion, transfer to a 4-year institution, and GPA at the time of degree completion or transfer).

Significance of the Study

This study is significant due to its potential to yield a better understanding of the impact instructional method has on students who complete ACA 122. The learning objectives of an FYE course such as ACA 122 can provide the needed skills to community college students to assist them with transitioning and persisting to degree attainment (Padgett et al., 2013; Porter & Swing, 2006; Southwestern Community College [SCC], 2021; Tinto, 2007). Furthermore, this class at the identified NC community colleges covers topics regarding college policies, campus resources, major and career exploration, preparing to transfer to a senior institution, and developing communication skills (SCC, 2021). The learning objectives of ACA 122 are consistent within the state and should cover a baseline of topics. A better understanding of this

population will help institutions with persistence and degree completion. Analyzing the success of these students associated with the ACA 122 modality will increase the support of at-risk students, promote higher education, and eliminate barriers to student success. As a result of this information, these students can be provided with assistance to improve and/or continue their success as a student. A better understanding of the impact on the instructional method of ACA 122 will not only assist the community college observed in the study but will be transferable to other institutions within the NC Community College System that offer the class under differing instructional methods. This information may lead to an adjustment of how those institutions offer the course, therefore impacting the success of their students with regard to retention and persistence to graduation. There is a need to understand the impact of instructional methods better, and within this need is the ability to understand common practices of face-to-face and online instruction. Course requirements such as the textbook, classification of the instructor (faculty or staff), and the variations of technology used to accommodate the interaction between the students and the instructor impact the students enrolled in the course.

Theoretical Foundation

The theoretical foundation of this study is the result of the ever-changing environment of higher education and the shift many institutions are experiencing in their instructional methods for classes. Essentially, these institutions are moving to DE due to the changing landscape of their target population and the shrinking budgets that have enabled face-to-face courses. Prior to the COVID-19 pandemic, there was a rise in online instruction; it is important to look at the effectiveness of online instruction over the traditional, face-to-face format. ACA 122 at the NC community college level is a class that is offered on both platforms. It is important to see if one platform is more effective than another or if one method is a predictor of success among those

enrolled. A better understanding of the potential impact of instructional types on a college student's ability to be successful offers a background for future guidance; increased understanding provides relevant context regarding instructional platforms (Black et al., 2016; Lai et al., 2013).

A theoretical approach to better understanding and potentially identifying the impact of a student's success based on the instructional method yields a holistic understanding of student needs and attributes associated with online education. Online education is rooted in many theories related to higher education. Theoretical approaches are often connected to Tinto or Astin when exploring student development theories, but as higher education evolves, so do theoretical frameworks linked to online education. Understanding the characteristics of practices in DE and face-to-face instructional methods can help investigate the impact of success on students enrolled in each of the platforms. Knowing the potential impact of a particular modality on student success leads to questioning if one modality is better for student degree completion, as well as assisting institutions with providing interventions to better equip students to face challenges. The study's primary theoretical framework, Anderson's Online Learning Model, is discussed in the next chapter as other frameworks are examined.

Definition of Key Terms

Community College- a two-year government-supported college that offers an associate degree. Also known as two-year colleges (Mission College, 2015).

Distance/Distance Learning- a method of study where teachers and students do not meet in a classroom but use the Internet, e-mail, mail, etc., to have classes. Also known as online classes (Urtel, 2008).

Face-to-face Instruction- a setting where the instructor and the students of an educational institution are in a place devoted to instruction, and the teaching and learning take place at the same time. Also known as traditional classroom (Urtel, 2008).

First-Year Experience (FYE)- an intentional combination of academic and co-curricular efforts within and across postsecondary institutions (Keup, 2014).

Four-Year Institution/4-year/Senior College- a college that offers the regular four-year course traditionally required for a bachelor's degree (Keup, 2014).

Instructional Intervention (Intervention)- an instructional intervention is a specific program or set of steps to help a student improve in an area of need (Instructional Intervention, n.d.).

Non-Traditional Student- a student who is often categorized due to being over the age of 24. The age characteristic acts as the variable that captures an adult population who often have family and work responsibilities and other circumstances that can interfere with the completion of educational objectives (NAEP glossary of terms, n.d.).

Traditional Student- a student is often categorized due to age at the time of enrollment in a college setting; this age range reference is 18-24 (NAEP glossary of terms, n.d.).

Assumptions

One assumption is that all students enrolled in the NC Community College System are required to take ACA 122. ACA 122 is a required course for students completing an Associate of Arts (AA), an Associate of Science (AS), an Associate of Fine Art (AFA), or an Associate of Engineering (AE). Students completing a certificate or an Associate in Applied Science (AAS) are not required to complete ACA 122 for program completion. The study looked at all degree-seeking students enrolled in ACA 122 at one of the two NC community colleges to research this

course. Another assumption is that rural institutions, prior to COVID-19, only offered ACA 122 in a face-to-face setting. Rural community colleges often offer online instruction as a means of assisting students who geographically cannot make it to campus. Community colleges offer online instruction to assist students who may have a non-traditional work schedule or other commitments that prevent students from attending campus regularly. Community colleges offered ACA 122 online and face-to-face prior to COVID-19. Another assumption is that only non-traditional students utilize online instruction. Traditional students also enroll in online classes. A final assumption in this study is that the ability and quality of instruction are consistent throughout the state.

Additional assumptions that impacted this research topic are separated into three areas: (1) course characteristics, (2) student characteristics, and (3) geographic location.

- *Course characteristics.* Variations within and between the community college's ACA classes impact the findings. ACA 122 has established learning goals at the state level to allow for a baseline of information provided in the course's instruction.
- *Student characteristics.* Student characteristics also impacted the findings of the research. The student characteristics include the individual student's academic ability, the types of learning the student best processes, how the instructor presents the information if a student has an identified learning disability or is provided accommodation, the ability of the students to use technology if taking the class virtually, the amount of time the student has to devote to the course, and whether the student completed their degree.
- *Geographic location.* PCC's and SCC's physical locations within North Carolina can impact the study. The students enrolled at these institutions can be located anywhere

based on open enrollment and online course availability. In addition, many of the students enrolled may be commuting to campus. Students may select the online instructional method based on the result of an employment commitment and conflict with required program courses. However, differing geography is also a means to yield relatable data to those regions of the state. Students may also select a face-to-face course if it aligns with their already scheduled classes and will not require them to return to campus at a later time of the day or on a different day of the week.

With these assumptions related to instruction at the institutions, various characteristics of the students enrolled in the class, instructor ability, and the physical location of the institutions, this study generalized the results to assist the institution in having an understanding of variables that impact the success of students within ACA instruction (online or face-to-face). Understanding these assumptions can better assist in evaluating the reliability and validity of the results; through these assumptions we can ensure the analysis of results are as meaningful as possible.

Bias

Bias directed to one instructional modality could impact the assessment of the impact of ACA 122. I do not view one modality as superior to another. The hypotheses in this study selected face-to-face as the focus for comparison and do not imply face-to-face instruction as a superior modality of instruction. The institutions that provided data for the assessment are accredited institutions and have met the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) expectations (Guidelines for addressing – SACSCOC. Guidelines for addressing distance education and correspondence courses, n.d.). In addition, I do not view one of the institutions that provided data as superior to another institution; the data provided were analyzed to its full potential without bias.

Scope and Delimitations

This study looked at students enrolled in ACA 122 at two community colleges and their degree completion and final GPA. Understanding the impact of the instructional method (online or face-to-face) of the ACA course at PCC and SCC can assist these institutions in adjusting the instructional method of the course or identifying the need to provide additional support within a particular type of instructional method. PCC is located in eastern NC and has a total enrollment of just over 12,000 students (NC Community Colleges, 2015). SCC is located in western NC and has a total enrollment of over 4,600 (SCC, 2021). Community colleges are the foundation for providing a skilled workforce in the communities where they are located; offering these institutions information about the impact of the instructional method of ACA can assist these institutions in delivering additional assistance to aid in the success of the students enrolled.

Limitations

Due to the scope and limits of this project, some limitations will impact this research topic. Identified limitations are separated into three areas: (1) institutional support, (2) student aptitude, and (3) the instructor's ability to teach.

- *Institutional support.* Variations in the community college's student support network will impact the findings. Limitations connected to the campus support resources and intervention mechanisms can vary between these institutions.
- *Student aptitude.* The academic preparedness of students enrolling in ACA 122 will impact this study. The amount of time since a student was enrolled in high school, their final GPA in HS, or the courses they completed in general or advanced curricula (such as Honors or Advanced Placement) will affect results.

- *Instructor's ability to teach.* Results are also likely to reflect the instructor's ability to convey the materials in the manner best suited for students and variations in instructional methods (technology, group, discussions, quizzes, homework, and examinations). Differences in the instructor's ability to relate to the class's learning objectives are a limitation of studying ACA 122 and measuring the success of the course.

The findings of this study can provide a framework when providing the course to their students. This understanding will also aid in the future development of policies for instruction and practices that are seen as effective in supporting the academic success of students enrolled in ACA 122.

Advances in Practice

As previously stated, understanding the potential impact on a student's success as a result of the instructional method of ACA 122 provides meaningful information to further the development of policies and practices around ACA 122 instruction. If the instructional method is a predictor of success, this knowledge can lead to advances in an institution's approach to the class, course redesign, student advising, or future course offerings. Advances in practices for instructing a course on two different platforms will assist the institutions in a better understanding of the challenges students enrolled in these classes face. In turn, a better understanding of traditional seated instruction and online instruction of ACA 122 can lead to enhancing teaching practices, streamlining instructor abilities and awareness, and potentially adjusting the instructional method to each school's student populations.

This study can have influence regarding the ACA course design in an online and traditional face-to-face platform. Understanding students' success in each platform can assist

those institutions in establishing best practices, or providing, if needed, additional support. Studying the success of students enrolled in each platform will better serve the students and assist them in being successful and completing a degree. Should significance not be identified, raising awareness of the challenges students face on each of the platforms can lead to institutional mindfulness in benchmarking effective ACA instruction, identifying a connection to the instructional method of potential successful modalities. In addition, if this study provides evidence of an increase of success in one platform over another, community colleges can utilize this information in adjusting the instructional method of first-semester classes.

Summary

The purpose of this study was to examine the potential impact of the instructional method and the success of students enrolled in a standard college transfer success class, ACA 122, as indicated by the completion of these students' AA, AS, AAS, AE, AFA, or AE degrees at community colleges in the eastern and western regions of NC. Gaining information about the potential academic impact on students enrolled in the DE and face-to-face platforms of this class can provide beneficial information pertaining to the course design, high-impact practices, common core course components, and academic support offered. Examining this course platform can initiate and implement policies regarding course requirements at other community colleges across NC. The outcomes of this study are a general review of the impact the institutional method has on students enrolled in ACA 122. Additionally, the findings can serve to develop the class for future students' success. The study utilized a quantitative, non-experimental research design to address the research questions directed to the students' success in each of the instructional methods. The students enrolled in each platform were compared against each other regarding their completion of their degree as well as their GPA at the time of degree completion.

Chapter 2 provides a review of literature directed to FYE and instructional modality, as well as the theoretical framework for FYE courses. Chapter 3 reviews the methodology for the study, and Chapter 4 provides an analysis of the results. Finally, Chapter 5 provides a summary and draws conclusions. The results of this assessment will direct PCC and SCC to continue, modify, or increase connection with the potentially at-risk students to assist their academic success.

CHAPTER 2: REVIEW OF LITERATURE

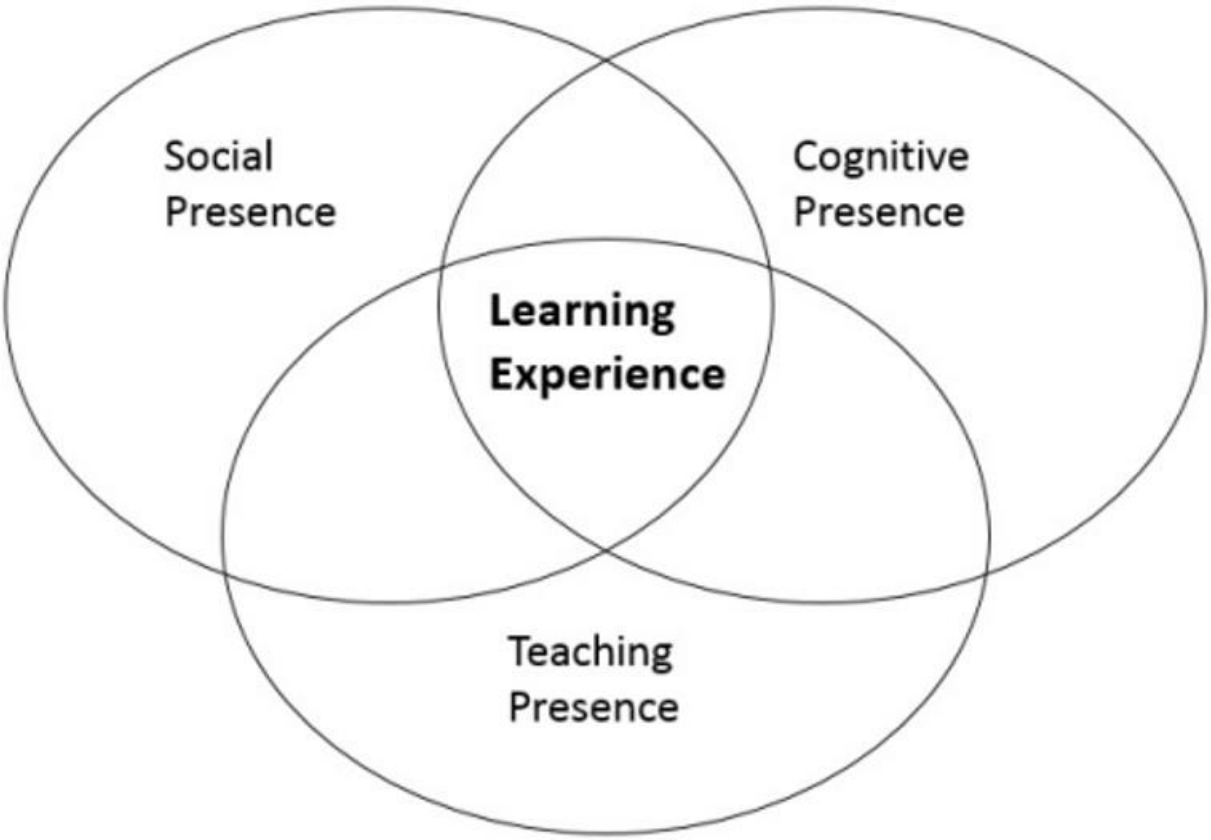
Institutions developed FYE courses to educate students, assist in the transition to college expectations, and aid in degree completion (Black et al., 2016). The NC Community College FYE course focused on educating students to transfer or transition to a senior institution is ACA 122. In addition to focusing on the student enrolled in ACA, this study also examined the instructional method. Many institutions are offering courses online to increase their target population for courses. Prior to the COVID-19 pandemic, nearly half of all community college students had taken an online course (Jaggers, 2014; Keup, 2014). The COVID-19 pandemic increased the likelihood of students completing the course in an online modality. Still, as many institutions consider returning to their previous modalities, this study will assist institutions in understanding the impact of the modality of ACA 122. Additionally, this review will explain the potential impact on the students' success based on the instructional method of the class (online or face-to-face). Moreover, it will identify whether one platform assists students in their transition to college more than the other (Bers & Younger, 2014). Having a better understanding of the impact of instructional methods on the students enrolled in ACA will impact the initiatives tied to the class and allow PCC and SCC to implement policies to aid in students' success in each instructional method. The students these institutions serve, the types of classes offered, and the policies in place are changing (Keup, 2014; Lipka, 2013). This study allows a better understanding of the impact of the instructional method this class has on the students enrolled.

Theoretical Foundation

A theoretical framework to identify how, or whether, the instructional method of an FYE course impacts students' success is difficult to pinpoint. One reason is that higher education is continuously changing; technologies are constantly being adapted or improved, and an

assessment of the area is frequent. For example, theories like community of inquiry and connectivism are being applied to the changing landscape of online education. Garrison et al. developed Community of Inquiry (CoI), which is a concept that is directed to three distinct presences (social, cognitive, and teaching) that the learning environment of an online FYE course manages in the same manner face-to-face instruction provides (Garrison et al., 2000). The learner understands their needs to grow and develop, and this theory outlines the growth from three different perspectives. Although the online learning environment is different from face-to-face, these same components occur in this environment. The CoI model presents a learning experience that is an overlap of a social presence, a cognitive presence, and the teacher's presence. Their model leans heavily on the need for instructors and students to interact and share ideas, information, and opinions (see Figure 1). The CoI model indicates that as technology advances, so does the ability to interact virtually — typically through discussion boards, blogs, wikis, and video conferencing. The relationships among cognitive, social, and teaching exist, resulting in learning online (Garrison et al., 2000).

Connectivism is a learning model that acknowledges shifts in the way information flows, advances, and develops as a result of massive communication networks. George Siemens, a common name during the rise of the Massive Open Online Course (MOOC), established this model as productive in terms of knowledge gained as a result of the networks and connecting information sets. Also, Siemens states a proponent of this learning model is that the connections themselves lead us to learn more and are more important than our state of knowing (Picciano, 2017). A required component of this theory is that students need to be provided with the connections for knowledge to flow, and experiences need to occur to support evolving information sharing. Picciano states Siemens' Eight Principles of Connectivism are:



Note. Community of Inquiry (Garrison et al., 2000).

Figure 1. Community of inquiry.

1. Learning and knowledge rest in diversity of opinions.
2. Learning is a process of connecting specialized nodes or information sources.
3. Learning may reside in non-human appliances.
4. Capacity to know more is more critical than what is currently known.
5. Nurturing and maintaining connections are needed to facilitate continual learning.
6. Ability to see connections between fields, ideas, and concepts is a core skill.
7. Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
8. Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision (Picciano, 2017).

A significant challenge to this theory is to establish the level of networking or share the requirements for a learning goal to be achieved.

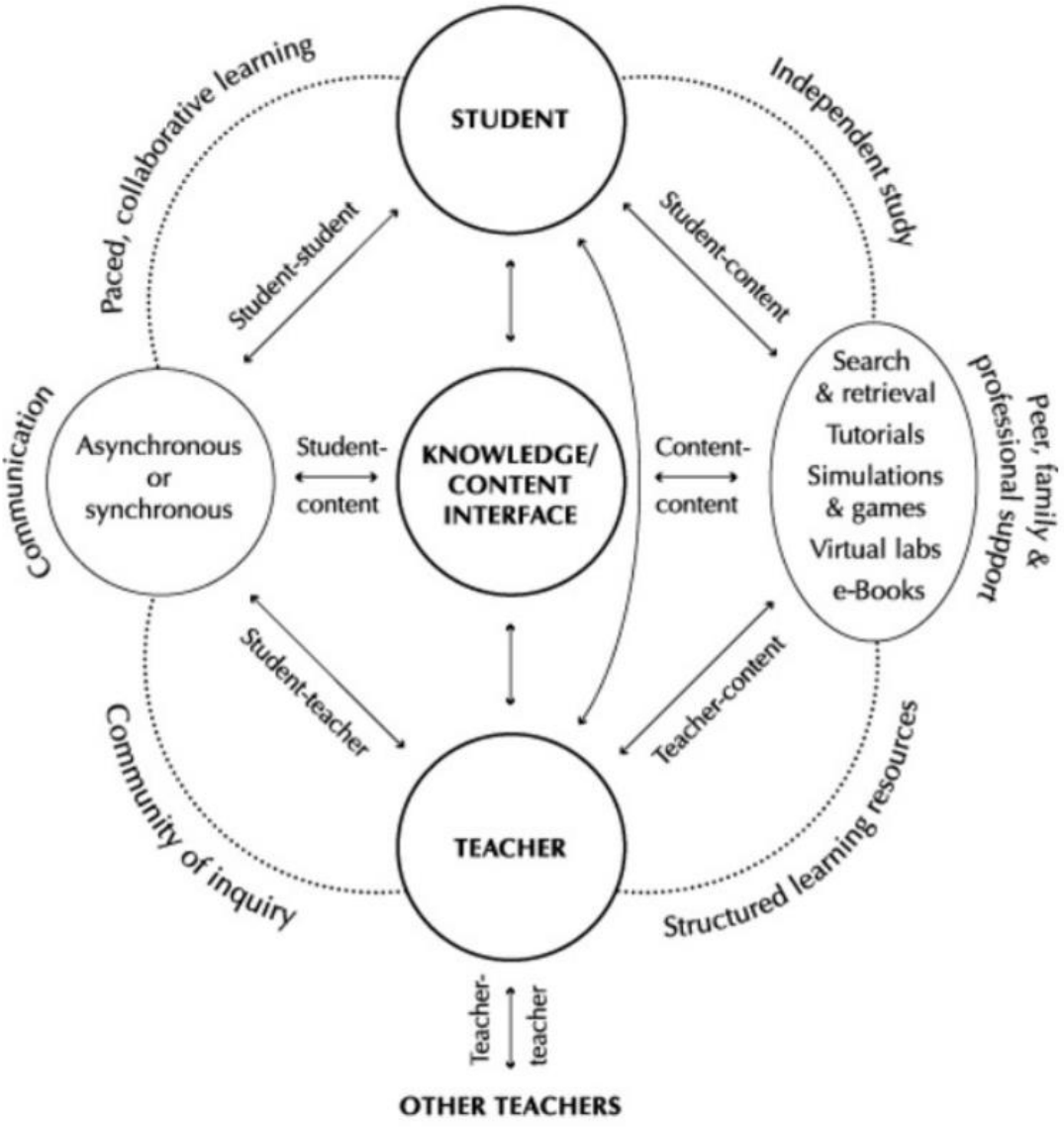
This theory assists in developing Online Collaborative Learning (OCL); this learning theory emphasizes innovation, collaboration, and problem-solving. The model combines the impact of technology on the learning environment, the instructor's ability, and the students to interact and share knowledge. OCL takes collaborative learning, knowledge building, and online technology to develop three phases of knowledge construction through discourse in a group. These three phases are:

1. Idea generating: the brainstorming phase, where divergent thoughts are gathered
2. Idea organizing: the phase where ideas are compared, analyzed, and categorized through discussion and argument

3. Intellectual convergence: the phase where intellectual synthesis and consensus occur, including agreeing to disagree, usually through an assignment, essay, or another joint piece of work (Harasim, 2012, p. 82)

Constructivism aided in the development of OCL due to the level of interaction of students when sharing information and solving problems through the application of knowledge. In OCL, the instructor's primary role is the facilitator of the learning environment as well as a member of the learning community (Picciano, 2017). OCL views the instructor's partnership in the learning environment as the keystone; this partnership leads to Terry Anderson's Online Learning Model (see Figure 2). Constructivism led to identifying four overlapping lenses that would provide the foundation of the Online Learning Model: community-centeredness, knowledge-centeredness, learner-centeredness, and assessment-centeredness (Bransford et al., 1999). In addition to these lenses, Anderson identified the evolution of the Internet — and the ability and capacity it has — in the information-sharing structure. The final piece of Anderson's theory is the element of interaction between the instructor, students, and content. The interactions between these areas within the four lenses led to the construction of his Online Learning Model.

The Online Learning Model took into account the interactions of the learners and teachers and the interactions between students enrolled in the course. The left side of Anderson's model identifies the learning environment and the communication that takes place. When utilizing web-based instruction, the learning environment can be synchronous or asynchronous, involve the student and teacher, or be between students without teacher input. The right side of his model identifies the exchange and impact of learning tools associated with independent learning (Picciano, 2017). Anderson's model illustrates the complexities of the interaction of an online instructional setting. His Online Learning Model supports the different online education



Note. (Anderson, 2011).

Figure 2. Anderson's Online Learning Model.

classroom types (asynchronous or synchronous), online educational tools (tutorials, virtual labs, simulations, professional support), learning environments (self-paced, independent study, structured learning, and community learning), and instructional interface (students to teacher and student to student interaction). Online FYE courses can be connected to these variables, and their impact can be assessed and compared to that of face-to-face instruction. The theoretical framework that considers the impact of knowledge, content, and relationships is that of Anderson's Online Learning Model. Taking into account Anderson's model, many of the factors that make an FYE like ACA 122 effective are identified.

Literature Review

Many challenges and opportunities exist at the college level and for the students attending during their first year. A challenge for the college is to effectively present students with the available resources and services for them to utilize. An FYE course is an opportunity for colleges to connect students with staff members and information about the campus' facilities and services (Adams, 2011; Keup & Kilgo, 2014). Students are challenged with many obstacles, ranging from developing on academic, personal, and social levels. Obtaining the needed strategies and skills to effectively learn and succeed in higher education courses and knowing about the resources available to assist students in learning are identified in FYE courses; this increases and enables the students' success (Padgett et al., 2013; Porter & Swing, 2006; Tinto, 2007). Many institutions have optional FYE courses, while some are now mandating students to enroll in FYE courses within their first two semesters at an institution; these FYE classes are offered for students to meet the various challenges first-semester college students encounter (Berrett, 2013; Tinto, 2007). The enrollment of students at two-year institutions is increasing, and the number of students taking classes online is growing (Mayo, 2013). In reaction to the

increasing online student population, FYE courses are consequently being offered with an online instructional method. This chapter will look at the history behind FYE courses, the theories and concepts of student retention and departure, and the differences in instructional methods of the face-to-face FYE and online FYE courses related to these student populations. This chapter will conclude by examining predictors of success for face-to-face and DE students and investigate how and whether FYE courses support retention and college success.

History of FYE

The movement known as the FYE is thought to have begun in 1972 when the University of South Carolina began offering a class by the name of University 101 (Mayo, 2013; Morris & Cutright, 2005; Tinto, 1975). This class was focused on multiple interventions that would promote and increase students' learning through various forms of interventions and development (Mayo, 2013). The academic component of the course would increase the students' understanding of learning styles, note-taking, test-taking, peer tutoring, and supplemental instruction. In addition to enhancing student learning on the academic level, the university also designed this class to develop the student on a non-academic level. Appreciation of community/institutional population regarding race, age, ethnicity, and socioeconomic level are just a few of the areas that were identified in the course (Tinto, 1975). Providing a foundation for understanding the student body on an interpersonal level and intellectual level, therefore increasing social development towards the community, were key focuses that potentially would develop a well-rounded student. Finally, the initial FYE course put the student in charge of their tenure at the institution and in society after graduation. The focus was shifted from the institution to the student; as a result of the course, the student was to take responsibility for learning, development, and civic duty based on the instruction and experiences attained in the course (Bers

& Younger, 2014). The historical institutional assessment indicates that the first year for college students was the point where the focus should be directed to assessing and responding to students' developmental needs (Keup & Kilgo, 2014). First-year assessment data provide a foundation for creating programs that identify student needs and link students to institutional services and resources, leading to increased retention (Tinto, 2007).

Many other institutions adopted this philosophy in the mid-70s and through the remainder of the century. Various forms of higher education institutions utilize the quality of education this course provides to improve themselves. A second reason for implementation is to give students a detailed introduction to a program or to magnify the information provided at orientation (Bers & Younger, 2014; Mark & Romano, 1982). Developmental education as part of the institution's connection to new first-year students brings a sense of community to the class, therefore fostering a sense of belonging and connection (Cohen & Jody, 1978; Tino, 2007). An additional component of the class connects with the faculty. The FYE course often provides semiformal faculty contact due to the class being a non-major course or being instructed by non-faculty. The interaction between students and faculty allows students and faculty to communicate and decrease the stigma that new students can hold toward faculty (Castillo, 2013; Licklider, 1993). Also, the communication and connection with faculty over the duration of the class increase cognitive and emotional growth (Scanlon & Dvorak, 2019).

Furthermore, communication and interaction with the instructor of the class enhance the connection of the institution. Many of the instructors of the course are in the Student Life or Student Affairs area of the institution. Student Affairs instructors can promote many of the services and activities that develop the student in both personal and academic aspects while also increasing the student's sense of community and connection with the institution (Licklider, 1993;

Mark & Romano, 1982; Mayo, 2013; Morris & Cutright, 2005; Tinto, 1975). Additionally, this connection/sense of community is attributed to retaining students by reducing homesickness and departure (dropping out) (Licklider, 1993; Mark & Romano, 1982).

The impact of the FYE courses is more than communication and awareness of students' activities. Academic persistence, major choice, career/occupational assessment and selection, personal development, increased student satisfaction with an institution, graduation rates, knowledge of educational policies, institutional resources, and realization and establishment of educational aspirations are also attributed to the skills and connections made in FYE courses (Jones, 2013; Licklider, 1993; Tinto, 1975; Tinto, 2007). As institutions learned of the positive impact leading to increased retention rates and the other positive effects of this type, this course was adopted, implemented, and sometimes required at institutions (Licklider, 1993; Mark & Romano, 1982).

History of Distance Education

DE has been traced back to the mid-1800s, when there developed the idea of providing training or access for individuals who were not able to attend or have access to an institution. In the early stages of higher education, the term *access* was based on the ability of a student to attend the institution physically. The institution was sometimes not accessible (nearby or reachable) to the student; this could be the result of an inability to travel to the institution (often as a consequence of the physical barrier), moving to the institution, or transportation challenges (Schlosser & Simonson, 2006). Today, the term *access* takes on a new meaning.

Providing access has taken multiple forms of distance education: self-directed studies, mail-in coursework, and later utilized technology (The Association for Educational Communications and Technology, 2001). The use of technology emerged in the 1900s; radio and

television (Public Broadcast System) allowed institutions to reach students more efficiently. Further advancements of video teleconferencing and the internet fostered new platforms for professors and students to share and obtain knowledge (Brown & Freeman, 2010; Moore & Anderson, 2003). Today, the typical methods of distance education are in the form of videos, audio, and images in virtual classrooms. This media can occur synchronously or asynchronously. Students are learning asynchronously via chatrooms, web conferences, discussion boards, podcasts, and video conferencing. The current mode of DE has brought face-to-face instruction and communication to the virtual classroom, where the instructor can see the student and use both verbal and non-verbal communication to drive the class (Schlosser & Simonson, 2006; Warren & Churchill, 2022). Today, access has changed the possibilities of instruction. DE has given institutions the ability to connect with students worldwide, eliminating many of the barriers that previously existed. Through DE, the expanded student market provides an enormous pool of applicants for institutions to serve and survive.

Managing the Quality of Instruction of Distance Education Courses

Institutions have begun using online learning methods for multiple reasons. A few of the motivations behind using this form of instruction are the reduced costs of instruction, the increase in potential student enrollment, reaching a new student population previously not accessible, and staying competitive with other institutions in the higher education market (Milheim, 2004). The literature on this topic often identifies a primary need to provide adequate services that are deeply rooted in the assessment. As institutions move to this form of instructional method, the need arises for the institution to monitor the effectiveness of the online course for both the professor and the students. Feedback is necessary for both the students and the instructor to examine the efficiency of the online course. The reviewer(s) should look at

assessments of the learner, the instructor's strategies for instruction (the class needs to use multiple approaches to instruction), whether the course was designed to meet various learning styles of a diverse audience, review feedback from previous facilitators and students, and foster a learning environment that motivates and spawns learning for diverse students with varying learning styles (McGlone, 2011; Milheim, 2004; Robson, 2000).

For years, the use of technology has been examined to enhance the learning experience. A few of the pathways through which computers and other forms of technology can improve learning are by increasing classroom access/information for students, enabling students to search for specific pieces of knowledge quickly in past lectures, reviewing previously posted instructional materials, navigating multiple course assignments/objectives, being able to monitor course components that are completed and still needing attention, and providing additional resources to support learning and skill development outside of normal classroom hours (Robson, 2000).

Furthermore, online instruction by the instructor should not be assumed to be equivalent to that of face-to-face classroom interaction (Cohen, 2003). The overall quality of the class, the instructor, and the educational software utilized in the course delivery needs to be constantly assessed to manage the quality of the instruction/delivery. Instructional design is the foundation for evaluating the instructor in the online course. Clearly defined expectations/outcomes for instruction are one way to assess students, but with the use of technology, the measurement of teaching is increased. Testing via technology can generate examinations based on previous responses, creating a better snapshot of the student's (and class as a whole) acquisition of knowledge. Monitoring student assessment provides the instructor with the ability to modify and adjust course topics and instructional methods. Finally, it is also important to understand that

technology can be used to assess a student's level of understanding of the subject matter at the end of the term and apply those results to the betterment of the course in future terms.

Monitoring the delivery method and the ability to provide instruction to students is the first step in managing the quality of DE courses (Bernard et al., 2004). Evidence of the instructor's effectiveness in communicating topics as well as responding to student queries is critical to achieving learning outcomes. Besides the timeliness of correspondence, the level of communication between the instructor and the students has a positive relationship with students' achievement and satisfaction (Attiq-Ur-Rehman & Rahman, 2012; Bernard et al., 2004; Cohen, 2003). Literature also suggests instructors of online courses are held accountable for their course content at the same standards as their face-to-face courses. Attending online sessions (like face-to-face class meetings), requiring participation, presenting information to their classmates, submitting coursework, and holding virtual office hours are standards for measuring the instructor's course content (Bernard et al., 2004; Rafiq et al., 2014).

Monitoring student feedback is also a needed method for assessing the effectiveness of an online course. By surveying the students participating in a course, and students who complete an online program, the department/institution can monitor the instructors' ability to present the information and the effectiveness of the delivery methods. These surveys can allow for modification as needed from term to term (Cohen, 2003). The course standards and the encompassing programs are also reflected by the students' perception of the interaction between themselves and the instructor, text and online materials, the technology used in presenting the course materials, and technology for hosting virtual classrooms. Feedback from current students allows for midstream alteration to be made to an online course.

An example of this could be that the initial training of the online program accompanying a course may not be adequately illustrated for students to navigate. When assessing the feedback from graduates working within the industry, the program is directed to allow for alteration to the program to educate better and train students. The number of topics covered in a program, the number of graduates in a program, the need to learn less history of the subject, and the necessity to find out more about communicating with diverse populations were identified as examples of a need when providing this form of instruction (Cohen, 2003; Dominguez & Ridley, 2001; Rafiq et al., 2014; Robson, 2000).

Literature suggests further examination of the software applied in DE courses' assessment needs to explore the information obtained in the class; it is important to understand this as not only an evaluative tool but also a resource and teaching strategy. Technology and its assessment allow the instructor to manage the course and not just deliver the information. Educational software for distance education platforms should be based on theories of learning as well as be designed for the school's assessment of the course (Robson, 2000; Tanyel & Griffin, 2014). Understanding how teaching strategies may develop during a course and understanding how technology (computerized instruction and evaluation) can design and create a platform for teaching are important. Table 1 uses the learning theories of Skinner (deductive reasoning) and Piaget (transformational) to compare the level of importance of those people assisting in designing instructional software for teaching distance didactic coursework. Knowing if one modality does not benefit the student's success can lead to identifying the variable and offer corrective measures to aid in success. Finally, the failure rates of the FYE courses in an online environment could be the result of a lack of computer literacy for the students enrolled in the course (Tanyel & Griffin, 2014).

Table 1

Assumed Importance of Variables in the Assessment of Educational Software

Variable	Skinner	Piaget	Information Processing
Clarity of intent	4	3	3
Quality of dialogue	4	3	3
Sequencing	4	3	3
Student control	1	4	3
Individual differences	1	4	3
Individualized instruction	4	2	2
Educated guesses	1	3	3
Treatment of student errors	3	4	3
Motivation	1	3	2
Feedback	4	3	3
Reinforcement	4	1	2
Low level questions	4	3	3
In-depth questions	1	3	2
Concrete/abstract	2	4	1
Inductive	1	3	3
Deductive	4	1	3

Note. Key: 4 essential, 3 important, 2 irrelevant, 1 unimportant. Table 1 is used to develop and design educational software platforms (Robson, 2000).

Assessment of the instructor, students, and educational software used in the delivery of a distance education course enables the department, schools, or colleges offering the course to make better judgments on the quality of education they are providing their students. Constant monitoring is necessary to keep the course and program currently on their topic and in fulfilling the needs of the students and the industry they are serving (Attiq-Ur-Rehman & Rahmen, 2012; Bettinger et al., 2017; Cohen, 2003; Robson, 2000). Managing the quality of distance education instruction involves an array of factors and components that need to be monitored. The course design, the instructor's ability to communicate with students and present the outlined content of the course, the technology used to present information and manage virtual classroom discussions, and, finally, the student's ability to obtain, retail, and practice the content of the course are all factors that need to be constantly reflected upon. Looking at the quality of the instruction and being purpose-driven in the DE course assessment also assist students in achieving the highest possible DE outcomes (Bernard et al., 2004; Bettinger et al., 2017; Cohen, 2003; Dominguez & Ridley, 2001).

Theories of Retention

FYE courses provide evidence to increase the retention of students, but the reasoning behind their impact on retention may be underlying in some specific aspects of the FYE course (Mayo, 2013; Tinto, 1975). By understanding the impact of FYE courses and the theories they are rooted in, students' retention and persistence aids in examining the potential impact of the instruction method and the desired outcome on students. In short, the retention theory that is practiced in the FYE course may impact the success of the student enrolled, face-to-face or virtually. The following summaries of retention theories leads to a better understanding of the

components of each theory, which may, in turn, allude to the impact of FYE courses on first-term college students at higher education institutions.

Chickering's Seven Principles of Good Practice

Often referred to as Chickering's Seven Vectors, this theory can be part of the foundation for an FYE course (Tirrell & Quick, 2012). Core components of the class are centered on the student and the processes needed for the student to adapt to living at college and mature into adulthood. The core elements of a typical FYE course are higher education's academic components, understanding of degree requirements; explorations of learning styles, study skills, time management, communication, connection with faculty and staff; and campus resources (Mayo, 2013). However, it is thought that the seven principles are necessary for a student to mature and grow via changing the way a student thinks, feels, and interprets the environment around them. The following are Chickering's seven principles (Tirrell & Quick, 2012; Yount & Tandoh, 2016):

1. Developing a sense of competence: students will develop competence in the aspect of intellectual, physical, and interpersonal skills as they progress through higher education. Also, a student will need to begin using their mind, master course and curriculum content, and build cognitive skills needed to comprehend, analyze, and synthesize information. The physical skills relate to strength and fitness to perform. Additionally, the physical skills relate to the artistic and self-discipline to produce tangible products. Interpersonal skills relate to the development of new college students in the characteristic that the student needs to communicate effectively and to interact in group settings to allow the team to function or produce a desired outcome.

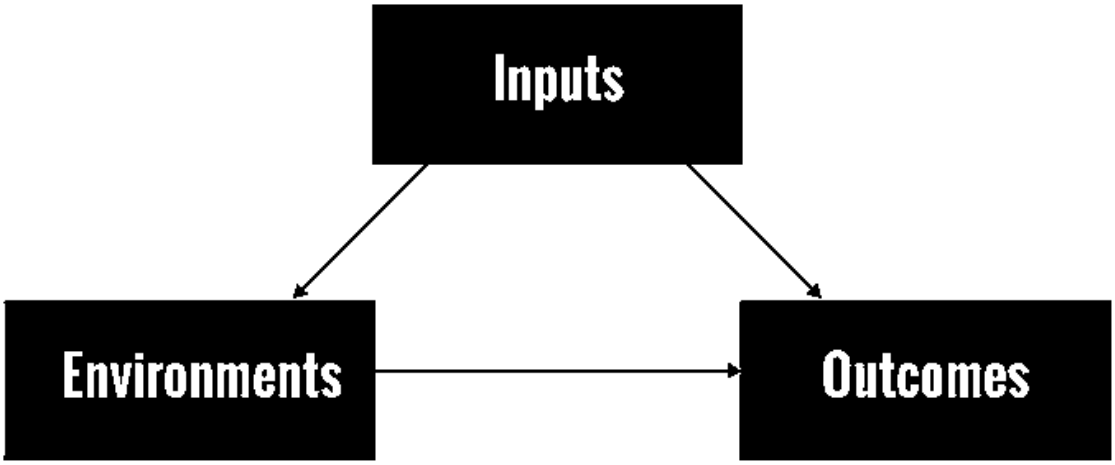
2. Managing emotions: students will learn to understand and interpret emotions and manage those feelings. This also relates to how students release emotions and portray emotions to other individuals as well as finding an outlet to release stress.
3. Moving through autonomy toward interdependence: Students will need to understand how to become self-sufficient and pursue personal goals and objectives. This also relates to establishing priorities and setting goals for the future. Developing autonomy is a critical point in the student's life where they become independent and seek relationships out of reciprocity.
4. Developing mature interpersonal relationships: Students are challenged in this vector due to the student's tolerance and appreciation of differences among individuals. Another piece of this vector is the step where a student begins to develop mature relationships that have a capacity for intimacy where the student bases those relationships on personal characteristics they value; examples would be honesty and respect.
5. Establishing identity: This step in development hinges on the student's preparation in the previous four vectors. The student at this stage needs to be comfortable with their appearance and their sexual orientation. Their sense of self and self-esteem will need to be developed as well as their acceptance of how others view them. Understanding culture, ethnicity, and religion are also required for the student to accept who they are as well as with whom they wish to associate.
6. Developing a purpose: This principle relates to where the student wants to go or who they want to become. This is developed through major exploration, major selection, personal skills, and their established identity.

7. Developing integrity: the student reaches the point where processing outcomes is no longer right or wrong, or black or white. At this stage, the student begins to personalize and adapt core values and access the importance of those values in the systems they interact with (religion, family, friends, and media).

Based on the previously identified principles, a student can obtain maturity and be a functioning member of society if they can achieve each of these areas. However, it is not likely that a student will achieve each of the vectors in a one-semester FYE course (Congos, 2002; Tirrell & Quick, 2012; Yount & Tandoh, 2016). Although these principles can be identified and touched on in an FYE course, a student is not able to navigate them in an in-depth manner leading to self-examination, development, and educational attainment to complete the process (Congos, 2002; Foubert et al., 2005; Tirrell & Quick, 2012; Urtel, 2008).

Astin's Theory of Student Involvement

Astin's Theory of Student Involvement contributes to the success of the FYE experience course. Astin's theory is based on the student's level of interaction and participation with the institution. This three-element model is condensed into inputs, environments, and outcomes (see Figure 3). Accompanying these three elements are five postulates about involvement. The first of the three aspects are the *Inputs*; inputs are the student's characteristics, background, and previous experiences. Second is the *Environmental* element, i.e., all of the experiences in college. The final element is the O*utcome*; the outcome is who the students are at that point in their life (characteristics, the level of knowledge attainment, and values that the students possess once they have completed their degree program (Dumford & Miller, 2018). The five postulates that accompany the three elements are:



Note. The importance of this theory stresses the level of input put into the elements of the environment and the outcome.

Figure 3. Astin's Theory of Student Involvement.

1. Involvement requires mental and physical energy
2. Involvement is a continuous process
3. Involvements can be both qualitative and quantitative
4. The knowledge that a student gains from being involved is proportional to the degree they are involved
5. Performance is correlated with involvement

Based on the previous five postulates, the three elements are closely connected based on the level of input that develops. The input element builds and enhances the environment and outcome elements.

Astin's Theory of Student Involvement is typically practiced by the student services side of an institution, but it is not limited to this area. The academic affairs area of the institution also sees the importance of students being involved. Student involvement in co-curricular activities, student government, student organizations, residence halls, and other campus activities all relate to retention. Being involved and connected fosters a sense of devotion and connectedness to the institution and improves retention (Janes, 1997; Licklider, 1993; Ortagus, 2017; Von Destinon, 1988). Astin's theory stresses the importance of communication and connection with the institution. Communication and connections are key elements of the FYE course. Still, Astin's theory is designed to look at the development of the three elements over the duration of a student's time at an institution up to graduation.

Tinto's Theory of College Student Retention

Vincent Tinto's theory can apply to the students enrolled in FYE courses. Tinto's theory applies to both academic and student affairs, which are often the instructors of an FYE program (Longwell-Grice & Longwell-Grice, 2008; Mayo, 2013). Like Astin, Tinto's model also stresses

the importance of being involved on the college campus. Tinto's model simply blankets the idea of being involved at some level of campus activities, increasing the likelihood that the student will have quality contact with faculty, staff, and fellow students and develop a connectedness to the campus through these interactions (Longwell-Grice & Longwell-Grice, 2008). The degree to which the student interacts would sequentially increase the participation in campus-based activities, student groups, and leadership positions at the institution ranging from student government to campus-based employment (Athens, 2018; Longwell-Grice & Longwell-Grice, 2008; Seidman, 2005). Tinto's Theory of College Student Retention does fit the model of the FYE course as compared to Astin's theory. The FYE course connects students with faculty at the institution in a classroom setting. These semi-structured classroom sessions are a pathway for students to feel comfortable with talking with faculty and staff and become connected with the institution, subsequentially becoming comfortable with the institutional environment and being aware of available campus resources (Mayo, 2013). Tinto believes improved student retention is best gained through enhanced and easily accessible academic, personal, and social support services (Tinto, 2007). All of these factors are topics covered in the FYE course. Tinto's theory indicates that the institution's connection increases as students are enrolled at an institution throughout their degree; this process can only begin in the FYE course.

Student Engagement Theory

The Student Engagement Theory is based on a student's relationships with the institution. These relationships take multiple forms; examples are living in a residence hall, being part of Living-Learning Communities, playing on a sports team, being a member of a club or student group, going to class, or working on campus (Kahn et al., 2017; Kuh, 2009). This theory can also apply to a community college where many typical examples do not occur. Enrolling in a course

such as ACA, working at an on-campus job, participating in a campus club or organization, and being a member of student government are methods to build the student's relationship with the institution. This theory is close to Tinto's Theory of College Student Retention because it pressures the importance of involvement and forming ties with the institution. Conversely, this theory focuses on the student's involvement with the learning environment. This interaction is not throughout a student's tenure at the institution. Instead, it is the quality of interaction and engagement, and this begins early in the student's time at the institution (Harper & Quaye, 2009; Kahn et al., 2017; Kuh, 2009). Capturing and engaging the student at the beginning of their institutional tenure will allow for the engagement and involvement to continue to build. The level of interaction that a student has with the campus and the quality of the effort a student gives to those activities is linked to the outcome of retention (Harper & Quaye, 2009; Kuh, 2009; Noel et al., 1985; Ortagus, 2017).

Student Departure

Previous research has identified that the connection a student has with the institution increases their likelihood of remaining at the institution. It has also been determined that an FYE course aids in the retention of new first-year students (Ryan et al., 2016). However, it is also essential to examine possible avenues by which students will leave an institution. Departure can take different forms; students can be forced to leave an institution due to legal reasons, academic reasons ranging from transferring to another institution or becoming academically ineligible to attend, or they may simply stop attending (often in good academic standing). Hopefully, an understanding of the theories of departure will also aid in the discussion of how FYE courses can retain students at institutions.

Theory of Student Departure

The Theory of Student Departure, also known as the Student Integration Model, was Vincent Tinto's explanation of the three principal sources for students to depart from an institution. Tinto identifies the three main reasons students leave an institution as the result of academic difficulties, the inability for students to resolve their educational and occupational goals, and failure to become or remain joined and connected to the intellectual and social life of the institution (Milem & Berger, 1997; Seidman, 2005). Although FYE courses, on average, do correlate to students with a higher first semester GPA and do assist in connecting students with major and occupational possibilities, it does not guarantee that students will stay true to that direction. FYE courses can only connect and increase exposure to an institution; they cannot aid in a continued connection with intellectual and social exposure at the institution after the completion of the class (Braxton e al., 2004; Seidman, 2005).

Vincent Tinto's Model of Voluntary Departure

Tinto's model is a form of departure from college where students choose to leave the institution. The reasoning for leaving may be the result of the student not seeking membership in the institution, or groups, or other bonds (formal and informal with the institutional environment (Berger & Braxton, 1998; Tinto, 1975). This theory is relevant when examining the FYE; the FYE course requires students to participate and take membership in the class if they do not have ownership in their own future. Being enrolled in an FYE course does not prevent students from not taking membership within the institution and prevent them from departing. However, the FYE course is an avenue for the students to become connected with the institution within the class itself. It provides opportunities for them to learn about other engaging groups within the institution (Berger & Braxton, 1998; Milem & Berger, 1997).

In conclusion, the theory that best fits the foundation of an FYE course is that of Tinto's Theory of College Student Retention. Tinto's theory applies to both academic and student affairs, which are often the areas of instructors for an FYE course (Longwell-Grice & Longwell-Grice, 2008; Mayo, 2013). These areas of the campus are repeated topics covered in the course. The connections between the students and the faculty, staff, and classmates build on a first-year student's connection with the institution. The educational objective of the class is to develop a student's skill for adjusting to college and educate the student about institutional policies, procedures, services, and resources (Longwell-Grice & Longwell-Grice, 2008; Mayo, 2013; Seidman, 2005).

Examining the Foundation of First-Year Experience Course

The foundation and formation of a freshman seminar or FYE course at an institution are rooted in the need to serve a population at the institution (Lamb et al., 1997). Based on a needs assessment of the institution as a whole or a specific department or college inside the institution, the potential benefits of a course of this type may aid in the institution's (or department's) mission. Typically, a needs assessment is focused on retention due to academic standing or attainment of a benchmarked first semester GPA. The GPA is often a predictor of success within a degree program or at the institution as a whole (Cohen & Jody, 1978; Lamb et al., 1997; Tinto, 2007). Prior research has indicated that new student GPAs do increase with the participation and completion of an FYE seminar (Ryan et al., 2016). Using GPA as a predictor of retention and completion, continued examination for implementation is reasonable.

In addition, FYE courses appeal to institutions due to their ability to facilitate a student's understanding of the goals of the institutions, assist in the understanding of the degree requirements and institutional policies, establish a connection with the faculty, engage the

student on self-reflection, and become a stakeholder in their education and degree achievement. In short, FYE courses can yield a better-informed student (Lamb et al., 1997; Tinto, 2007). Students who are aware of the institutional policies are likely to not violate or make social and academic mistakes that could impact their development, performance, and completion of degree programs (Tinto, 2007). One example is understanding plagiarism and citation needed for assignments. The increased retention and graduation rates of students can improve the student body's outlook on the institution and offer a positive influence to potential students, partnerships, and donors in years to come (Keup & Kilgo, 2014; Lamb et al., 1997; Padgett et al., 2013; Porter & Swing, 2006).

Based on the results of the needs assessment of the institution, or a department inside the institution, the decision may be reached to develop and implement an FYE course. The decision to create a course of this nature should be composed of various stakeholders within the institution and interacting systems (Ryan et al., 2016; Upcraft et al., 1989). The decision should be influenced by multistage discussions among students, faculty, staff, alumni, boards of trustees, members of accrediting agencies, career services, and the institution’s higher administration (Cohen & Jody, 1978; Lamb et al., 1997; Tinto, 2007; Upcraft et al., 1989). If the approval of a freshman seminar course is achieved, the next step would be implementation.

The implementation phase is often more challenging than the approval process. Many factors need to be taken into account, including the environment of degree programs, institutional degree requirements, hours required for degree completion, the impact of adding the additional hour(s), financial implications, and potential pushback from students and parents. Academic considerations that need to be identified at the institutional level could be whether the class will count towards a part of the foundation's curricula or the general education requirements

of the institution as a whole. Also, it should be decided whether the class will count toward a requirement within the specific major or whether the class will count as an elective (Lamb et al., 1997).

Once the institution or department identifies the place for the class, the next step is to design the course. Topics that are covered in the class provide a positive influence on student progression. The FYE course frequently covers areas of academic planning, the value of college, study skills, managing time, test-taking strategies, career planning, orientation to campus, awareness of campus resources and services, and managing emotions and relationships (Cohen & Jody, 1978; Lamb et al., 1997; Vancil, 2001). The text for this course is often readily available but is not limited to previous text offerings. Many institutions create an FYE course's text, making it specific to their institution; institutional texts for this course can be more beneficial in linking students to university policies, procedures, offices, and resources (Barefoot, 2008; DuHame, 1996; Upcraft et al., 1989).

Aside from the text used in the class, a crucial element of the course is the interaction with the instructor of the course. Students enrolled in an FYE course are building connections with faculty, staff, and classmates. These connections are all part of various theories about retention; the previously discussed theories of Student Engagement Theory, Tinto's Theory of College Student Retention, Astin's Theory of Student Involvement, and even Chickering's Seven Principles of Good Practice all have components of building connections and communication.

FYE courses are typically small in size to better initiate classroom discussions. Topics of the class challenge the students' perspectives of themselves as well as why they are pursuing a particular major or career path. Also, the diversity of the classroom can enhance discussion and promote participants to develop a concept of self, identity, and interpersonal relationships

(Foubert et al., 2005; Mayo, 2013; Tirrell & Quick, 2012). The diverse backgrounds within a class also build connections referenced in Tinto's Theory of College Student Retention, Astin's Theory of Student Involvement, and many components of Chickering's Seven Principles due to the exposure difference of individuals. Exposure can foster tolerance and appreciation of diversity, personal perspectives, and viewpoints. Developing and enhancing a student's appreciation of their environment and varying characteristics make the student feel unique, thus promoting diversity and appreciation of exposure (Budny, 2001; Foubert et al., 2005; Lamb et al., 1997; Ryan et al., 2016).

Contents and learning outcomes of the course also aid in connecting with the institution. The link with the institution can be as essential as learning of the institution's history, institutional programs, and services to requiring students to work on service projects at the institution. This level of involvement can increase the student's future participation as well as foster a sense of service and community (Harper & Quaye, 2009; Hathawayl & Atkinson, 2001; Licklider, 1993; Mayo, 2013; Mark & Romano, 1982; Ryan et al., 2016; Upcraft et al., 1989). Astin's Theory of Student Involvement, Tinto's Theory of College Student Retention, and Student Engagement Theory reference the importance of connecting students with the institution and increasing the possibility of the students remaining at the institution for terms to come.

A final component of the FYE course is assisting in the transition and adjustment in which new, first-time freshmen may experience difficulty when attending college. This form of adjustment refers to the ability of college students to experience, process, and react to changes in the environment at the institution. Often the adjustment is interpreted as living away from home, but there are many more challenges to adjusting to college other than living arrangements. First-year students encounter a multitude of new and different aspects that are related to college life.

Forms of adjustment can fit into three core areas: academic, social, and emotional; examples include time management, feeding themselves, and managing personal finances. These three areas require first-time college students to navigate through these areas to adjust to college life properly (Adams, 2011; Harper & Quaye, 2009; Kuh, 2009; O'Keeffe, 2013; Porter & Swing, 2006).

Academic Adjustment

The FYE course can assist first-time college students with adjusting to college academically through varying mechanisms. Educating students on the learning styles, note-taking, reading practices, study skills, and academic resources are a few of those pathways to promoting academic adjustment and assisting the students in succeeding in the classroom. FYE courses also help students understand academic policies, navigate curriculum requirements, and establish academic goals (Jaijairam, 2016). Using academic advisors and communicating with instructors are also practices aiding in their academic adjustment (Adams, 2011; Barefoot, 2000; Lamb et al., 1997; Smith, 2004).

Social Adjustment

Social adjustment is a critical component of a first-time student's adjustment to college. This form of adjustment involves the student's ability to interact with an environment that they may not be accustomed to. This social adjustment is not only about fellow students but also about faculty and staff at the institution. The institution's diversity may include the student being exposed to differences in race, gender, ability/disability, religion, ethnicity, sexual orientation, and age (Congos, 2002; Jaijairam , 2016; Tirrell & Quick, 2012). A component of the class is to discuss the variances of the world's population and explain the importance of diversity. A product of this subject matter is the student being able to tolerate and appreciate diversity at their

institution and in the world as a whole (Mayo, 2013; Stengel, 2001; Upcraft et al., 1989; Wyatt & Bloemker, 2013).

Emotional Adjustment

Emotional adjustment for first-time students is quickly correlated to homesickness. An FYE course can offset this category of emotional reaction by linking the student to campus activities and assisting the student in becoming connected with some campus activities. Stress and anxiety are other forms of emotional adjustment that can develop early on in college. Being in a new place with academic and social demands can lead to stress and anxiety; students can learn about time management and mental health in the course. The course can also highlight campus activities to relieve stress or counseling services to assist students with coping strategies and managing their emotions on a deeper level (Wyatt & Bloemker, 2013).

FYE courses are a combination of retention theories that have one mission at their foundation: to facilitate student success (Upcraft et al., 1989). Although the texts and coursework vary from institution to institution, the common threads among the courses are that the students are connected with the institution, are made aware of campus resources, and can better adjust to college (Jaijairam, 2016; Morris & Cutright, 2005; Upcraft et al., 1989). The student's ability to adjust academically, socially, and emotionally can assist the student in completing degree requirements (Harper & Quaye, 2009; Lamb et al., 1997). Research on student retention and departure indicates that FYE courses improve a student's likelihood of obtaining higher GPAs, are retained from semester to semester, and have an increase in degree achievement (Noel et al., 1985; Porter & Swing, 2006; Scanlon & Dvorak, 2019; Tinto, 2007; Urtel, 2008).

The Significance of First-Year Experience Courses at Two-Year Colleges

Four-year institutions are commonly the focus of research on retention and degree completion percentages (Jaijairam, 2016). A majority of the investigation on FYE explains how the implementation, development, and use of FYE courses are a contribute to improving retention and degree completion (Jaijairam, 2016; Noel et al., 1985). The students at two-year colleges are very different from the typical full-time students at a four-year institution. More often, the students at a two-year college are part-time, employed, have attended a non-residential campus, and are loosely involved with the campus and campus-based activities (Wirt & Jaeger, 2014). Additionally, students at a community college previously were considered to be non-traditional, meaning they are likely older, financially independent, commute, and attend part-time (Wirt & Jaeger, 2014). The general view of students attending a two-year institution may be non-traditional, but trends show that more traditional students attend two-year institutions. Viewing the significance of an FYE course at two-year institutions requires a slightly different lens to consider their needs (Miller & Servaty-Seib, 2016). This lens does not need to focus on a specific population of the two-year college, but it needs to be widened to the view of all of the possible students at the college. A broader lens is required to see the needs and requirements of the traditional and non-traditional students who attend the institution.

Retention rates of nearly 55% at two-year institutions should have those institutions seeking resolutions to improve; roughly 45% of students who attend a two-year institution depart that institution within the first year of enrollment (Braxton et al., 2004; Wirt & Jaeger, 2014). Two-year institutions in the United States serve half of the undergraduate students in higher education; 6.5 million of those students are completing credit programs (*AACC Fast facts,* 2021). The need to implement and execute retention initiatives for half of the undergraduate students in

the US is a valid argument. However, the ability to meet the needs of a diverse student population of this type requires flexibility to increase the retention of this student demographic.

The previously reviewed retention theories and theories of student departure all indicated that connections to campus, improved communication with faculty and staff at the institutions, involvement, and developing skills needed for a productive and healthy transition to an institution are vital in retention (Bartefoot, 2008; Cohen & Jody, 1978). A review of a program/major-specific FYE course reported that faculties are more satisfied with students in upper-division courses. Those students also conveyed an increase in connection with the campus, and those students achieved higher academic performance than those who did not complete an FYE course (Jaijairam, 2016; Lamb et al., 1997). The faculty-student interaction was identified as an essential element of engagement at the two-year level. The increase of faculty-student interaction leads to student engagement outside of the classroom at the two-year institution's campus (Wirt & Jaeger, 2014). An FYE course at the two-year level would also improve connection with the institution, increase communication with faculty and staff, and increase retention and degree completion rates (Miller & Servaty-Seib, 2016).

Regardless of the institution's level, two-year or four-year, the platform for an FYE course is to provide opportunities for students to take advantage of and allow the students to grow and develop socially, culturally, and academically and become productive members of society. FYEs focus on multiple methods to promote and increase student learning (Mayo, 2013). Social, emotional, and academic adjustment is needed at the two-year level, just like the four-year institutions. However, the range of topics covered for both traditional and non-traditional students at the two-year level needs to be taken into account and addressed when developing the course. The needs of traditional and non-traditional students at the two-year level may require

more planning and education, especially resources for those who need to develop socially, academically, and emotionally due to the range of possible areas of need for the course. The possibilities of diversity that this course can encompass are enormous. The assortment of the students enrolled in an FYE class is a benefit for the class due to various forms of development (Licklider, 1993).

According to the previously reviewed theories of retention — Tinto's Theory of College Student Retention, Astin's Theory of Student Involvement, and Chickering's Seven Principles — communication and connections with individuals at an institution can lead to an increased connection with the institution, leading to a sense of community (Budny, 2001; Foubert et al., 2005; Lamb et al., 1997). Specifically, Chickering's fourth principle relates to developing relationships; beginning and maintaining relationships with peers, faculty, and staff helps facilitate the sense of belonging and commitment (Tirrell & Quick, 2012). Developing the ability to communicate and adjust socially is one of the ways an FYE course can aid two-year institutions.

The interactive, small class size of an FYE course is part of the course's communication and social development characteristics. Classroom discussions and communication with faculty/staff can expose students to new and diverse subject matters and people. The diversity of the students enrolled in the class and the topics covered in the class can aid in the social and emotional development of the student. A student can learn about many forms of diversity through the engagement of fellow students in the class, become tolerant, and form an appreciation for differences among individuals. Likewise, students will learn to manage emotions when communicating with people of differing viewpoints, opinions, and backgrounds.

Exposure to diversity can also aid the student in establishing their identity (Bers & Younger, 2014; Cohen, 2003; Harper & Quaye, 2009; Tirrell & Quick, 2012; Wyatt & Bloemker, 2013).

The FYE movement also encourages and often requires a student in an FYE course to interact, participate, and take part in some form of campus event or activity; the involvement aspect builds on the connection and devotion to the campus, therefore aiding in retention (Janes, 1997; Licklider, 1993; Von Destinon, 1988). This class component is valuable at the two-year level due to many students being part-time and working; other obligations can keep students from becoming involved. If a two-year FYE course can require this type of interaction between the students and the institution, the possibility for engagement and continued active participation can aid in retention (Bers & Younger, 2014; Goldrick-Rab, 2010; O'Keeffe, 2013). Depending on the form of interaction or type of activity, students can benefit socially, emotionally, and academically. All of these areas are components of the FYE course and are determinants of student retention (Mark & Romano, 1982; Mayo, 2013; Porter & Swing, 2006; Tinto, 2007).

The academic adjustment component of an FYE course also applies to both the two-year and the four-year institutions; Mayo (2013) identified that course elements would increase the students' academic adjustment. The FYE course covers topics that assist the students in understanding their learning styles and ways to improve notetaking, reading, test-taking, and studying techniques. Also, the course links students to institutional resources, such as tutoring or counseling services, which can further develop. Educating the student on the value of an education and empowering the students to take control of their time at the institution and develop and prepare themselves for a career in a particular field is a motivational tactic to academic development and adjustment (Bers & Younger, 2014).

FYE courses are pathways to assist in the retention of new students at institutions; this retention results from a combination of practices of retention theories engrained around one mission: to expedite student success (Jaijairam, 2016; Ryan et al., 2016; Upcraft et al., 1989). Student success is of particular importance at two-year institutions that educate 50% of the United States' undergraduate students. FYE courses connect students with the institution through interaction with students, faculty, and staff. Also, FYE classes at two-year institutions link students to campus services and resources that can aid the student in adjusting to college life, therefore increasing the likelihood of the institution retaining more students (Mayo, 2013; Morris & Cutright, 2005; Upcraft et al., 1989). Furthermore, FYE courses can aid in retention at the two-year level the same way as four-year institutions by preparing students to adjust to college academically, socially, and emotionally (Licklider, 1993; Mayo, 2013; Upcraft et al., 1989; Wyatt & Bloemker, 2013). Finally, the FYE course at the two-year institutional level is a means to keep students from departing the institution (Hassler, 2005; Wood et al., 2012). The departure from the institution can be a break in enrollment due to the student not registering (reasons can range from personal, financial, and physical location) or because of the student's transfer to another institution (Hassler, 2005). At the two-year level, departure as a result of transferring can be caused by the student transferring to another two-year institution to obtain a particular degree their current institution does not offer (Mourad & Hong, 2011). Many students will fulfill the needed Minimum Course Requirements (MCR) classes and will complete other general education classes needed to transfer to a four-year institution and leave the two-year institution before they complete a degree. Frequently, students will transfer away from a two-year institution to attend a four-year institution; 39% of students at a two-year institution will transfer to a four-year institution (*AACC Fast facts,* 2021). An FYE course can lead to an appreciation

and a sense of devotion to the two-year institution, increasing the likelihood of a student completing a degree before moving to a senior institution (Hassler, 2005; Kintzer, 1973; Wood et al., 2012). As Tinto (2007) explained in his Theory of College Student Retention, this can be achieved by improved connection with the two-year institution through communication and connection with students, faculty, and staff.

An FYE course at the two-year institutional level is vital in retaining students. Since half of the undergraduates in the United States are enrolled in two-year institutions, the need to serve this large student body is apparent (*AACC Fast facts,* 2021). The need to retain these students through academic, social, and emotional adjustment is continuously evident. Finally, an FYE course can be a pathway to increase retention and rates of completion for degree programs. FYE courses can lead students to develop a sense of devotion and the need to complete a two-year degree before moving to a senior institution (Bers &Younger, 2014; Flaga, 2006; Kintzer, 1973; Mourad & Hong, 2011; Wirt & Jaeger, 2014; Wood et al., 2012).

Differences in Pedagogy of Distance Education versus Face-to-Face

Current trends in higher education are focusing on the increasing diversity of the students and processes to increase the retention of the diverse student populations enrolled in those institutions (Woodard et al., 2000). The implementation of FYE courses yields increased retention rates from term to term as well as in-degree completion rates (Bers & Younger, 2014; Ryan et al., 2016). The growing student population taking DE courses necessitates that this student group also be offered with this type of course (Martz & Shepard, 2007; Porter & Swing, 2006). DE students have lower return rates than face-to-face. This is the case at many institutions; one reason for this lower return rate is due to the connection with the institution and to create a caring and supportive environment (O'Keeffe, 2013; Urtel, 2008). Students who

develop some level of connection with the campus achieve higher academic performance when they complete an FYE course (Lamb et al., 1997; Ryan et al., 2016).

The FYE course is not a one-size-fits-all course; the differences in requirements of the online and face-to-face student groups are similar, but the methods for executing course objectives vary. FYE courses are an institutional intervention that combines academic and social development at the curriculum level (Karp et al., 2017; Kuh, 2009; Ryan et al., 2016; Upcraft et al., 1989). Based on the institution or department that directs the FYE, some of the learning outcomes can fluctuate. Regardless of variances, the underlying theme and foundation of the class are universal; the shared objectives of an FYE course can lead to a potential increase in retention. An increase in retention can be achieved by promoting/facilitating communication among students, faculty, and staff. Improved retention occurs due to educating students on institutional resources, policies, and services, and teaching skills and practices that will increase academic performance, like study skills, time management, and test-taking (Lamb et al., 1997). The FYE course can focus on objectives to improve retention and enhance the students' ability to adjust to college; this includes traditional, non-traditional, online, and face-to-face students. Retention can be achieved and increased if the facilitator is aware of the needs of the students enrolled in their course and makes adjustments to course topics, assignments, and content for that student population's areas of development and interests (Cohen, 2003; Robson, 2000).

Increasing Communication

Discussion in face-to-face and online FYE courses is essential to developing a connection with peers, instructors, and the campus. For example, when an instructor of an FYE course is enhancing communication and appreciation for differences/diversity among classmates, the instructor could facilitate a class discussion using prompts to initiate the class. However, the

instructor for a DE class may find it difficult if there is not an active medium (online platform) for students to communicate or chat virtually. Suppose a discussion board is used for this activity; in that case, the impact or learning objective may be reduced (or lost) due to students not being able to view the physical differences of their classmates or use nonverbal communication to react and respond to classmates (Buckley et al., 2021; Dolan, 2008). Technology has developed ways for students to communicate and virtually view their classmates in real-time, and this increases the connection with their classmates through visual mechanisms (Dolan, 2008). One research study indicated that DE students had the same level of interaction and satisfaction they took part in as students who completed a course in a face-to-face setting (Buckley et al., 2021; Jacobsen, 2006). Although the results showed little difference between the two groups, the DE students' opinions of the classes' communication and the "fruitfulness and the ease in which they expressed their feelings, thoughts, and ideas" were interpreted as ample; there was a difference in the amount of communication group members exchanged outside of the class. The need for student-instructor connection and dialog are reasons for students not to take courses online (Jaggers, 2014).

Institutions need to be aware of the reason their students take classes online or face-to-face. Distance students prefer the flexibility, convenience, and time efficiency of online instruction. However, students also share common threads for not taking DE classes; they have a connection with the campus, a stronger student-instructor connection, and a need for course support (Jaggers, 2014). The ability for students to interact in a medium separate from a course could promote communication. Furthermore, students in a DE setting may be less inclined to respond due to the amount of time it would take to type and articulate their perspective of a class topic (Jacobsen, 2006).

An online FYE course can aid DE students (non-traditional and traditional) by allowing a medium for online students to interact with fellow online students (Buchanan, 2004). Buchanan explains how web-based programs can increase interaction because the FYE provides a forum, or chatroom, for DE students to interact. This forum can lead to improved communication and appreciation for the institution and program they are enrolled in. Also, communication in an online forum can encourage non-traditional students to act as mentors in academic or social roles to other students based on past experiences. The increased interaction and sense of participation and involvement in online courses are predictors of retention (Bers & Younger, 2014; Grummon, 2010; Moore & Anderson, 2003). Although this initially appears to contradict Jagger's review of involvement or student-instructor involvement, the level of course difficulty plays a key role in the need for interaction. The level of difficulty and time efficiency of an FYE course should be considered when reviewing the challenges of the instructional method.

Academic Skills

Another predictor of success is the ease with which students can perform at the institutional level. A new tendency in higher education is the use of technology in the classroom (physical and virtual); new, non-traditional students are faced with a learning curve when technology is used (Buchanan, 2004; Karp et al., 2017). Enrollment at two-year institutions in the United States is increasing at the same rates as four-year institutions (*AACC Fast facts,* 2021). However, the average age in these two areas is very different; the mean age of students at the two-year level is 28 years old, and 14% of those enrolled at two-year U.S. institutions are 40+ years old (*AACC Fast facts,* 2021). It is assumed traditional students have an increased ability to navigate and use online courses based on exposure to and use of technology, but assessing the student's perception is genuinely unknown. Traditional students who use online

communication to seek assistance. Non-traditional students often have a challenge in understanding and navigating technology used in higher education (Buchanan, 2004; McGlone, 2011; Robson, 2000; Verduin & Clark, 1991; Woodard et al., 2000). Teaching students how to navigate computerized educational software is the first challenge in teaching academic skill sets; once students can understand, navigate, and execute online resources, they are more likely to be retained (Karp et al., 2017).

Educating face-to-face students and DE students is very different when academic skills are illustrated. DE students need to computerize resources for instructors to assess their academic ability. Face-to-face students can utilize in-class activities to test listening, note-taking, and test-taking; online resources are needed to examine DE students (McGlone, 2011; Robson, 2000). Luckily, many online teaching resources are developed to aid in teaching subjects (Milheim, 2004; Urtel, 2008). Teaching academic skills to students in a face-to-face setting can be more accessible due to a reduction in technology and an increase in the use of verbal and nonverbal communication, as well as the ability to modify instruction in midstream.

Student Involvement at the Institution

Tinto's Theory of College Student Retention explains how to increase the retention of college students by increasing the level of participation at an institution. Institutional involvement also impacts the connection and commitment a student has to their institution (Longwell-Grice & Longwell-Grice, 2008; Mayo, 2013). On-campus and face-to-face students have an increased amount of involvement with the institution based on their connection, often physical setting, with the institution; this interaction can be stimulated with an FYE course (Ryan et al., 2016). Face-to-face students will have some level of exposure simply by walking to class

and visiting institutional buildings. To function, face-to-face students must interact (at some level) with students, faculty, and staff.

Moreover, the connection and exposure to campus activities, student groups, and other forms of connections are easily developed due to continuous exposure to the campus. Online students are at a disadvantage based on their separation from the institution. The online student population is not able to experience the sights and sounds of the campus and interact with faculty, staff, and students who are not enrolled in their online courses. The online student has reduced interaction, connection, and commitment to campus (Buchanan, 2004; Buckley et al., 2021; Dolan, 2008; Harper & Quaye, 2009). This challenge can be offset by multiple interventions where online students can attend institutional forums and view streamed (or recorded) campus seminars and presentations (Buckley et al., 2021; Dominguez & Ridley, 2001; Urtel, 2008).

Student persistence at the two-year level is a constant challenge, amplified by those students enrolled in online courses (Brown & Freeman, 2010; Mayo, 2013; Moore & Anderson, 2003). Statistically, students are at a higher risk of dropping out if they are at a two-year institution than students at a four-year institution; this is amplified if there is a lack of connection and an increase in external forces that DE students often experience (Adams, 2011; Urtel, 2008; Wood et al., 2012; Woodard et al., 2000).

DE students often enroll as part-time students and do not meet the requirements for government financial support; the financial burden of paying for college could be a determinant for continued enrollment (Flint, 1997; Ziskin et al., 2014). Contrastingly, students who enroll full-time may receive financial assistance; the pressure to remain in school due to reduced immediate financial burden can lead to increased retention (Flint, 1997; Ziskin et al., 2014).

Students who are not eligible for aid may need to break continuous enrollment to save money for a future term's tuition. They are less inclined to remain enrolled for lack of fear of initiating loan repayment (Ziskin et al., 2014).

Summary

Support systems that two-year institutions implement directly impact the persistence of online and face-to-face students. Retention and success of students at two-year institutions have increased as a result of the components of FYE courses. As previously stated, connections and communication with faculty, staff, and students; participation; and engagement with institutional activities and organizations; awareness of institutional policies and requirements; and building basic academic success skills all play a role in retention. An assessment of the students enrolled in FYE course (DE, face-to-face, traditional, or non-traditional) needs to be taken into account to establish learning outcomes for the class as a whole. The assessment can develop a baseline for the expected abilities, challenges, and outcomes of those students. College students are challenged with many difficulties, ranging from developing on an academic, personal, and social level to managing personal finances. Additionally, the knowledge and skills accessible to students in FYE courses enable student success. Distance education should not be one of those challenges. Colleges need to focus on improving DE and face-to-face instruction; an improved process for evaluation and execution will link to better online instruction. A better understanding of the relationship between retention and student success in FYE courses can be achieved if we compare the students who completed an FYE course online with those who completed the classes with a face-to-face instructional method; Chapter 3 identifies how a better understanding can be achieved at two NC community colleges. The results could lead to a better understanding

of the needs, challenges, and possible opportunities to improve learning objectives and instructional practices of both approaches to FYE courses.

CHAPTER 3: RESEARCH METHOD

This study provides insight and direction when assessing the level of predicted risk a student faces based on the modality of the instructional of their college transition course (ACA 122). A quantitative methodology was used to test hypotheses based on the questions guiding this study. The overarching research question (RQ) guiding this study was:

Does the instructional method of FYE courses at the community college impact a student's success at the community college? Success is measured in terms of degree completion within two years and three years from first enrolling in ACA 122, final GPA at the time of degree completion, or transfer to a 4-year institution and GPA at the time of transfer.

Two hypotheses to further measure the impact of the instructional modality of ACA 122 at PCC and SCC are as follows:

- H_1: Students who enroll in ACA 122 offered in a face-to-face instructional format are more likely than those who complete the class in an online format to complete a degree at the community college or transfer to a 4-year institution.
- H_2: Students who enroll in ACA 122 via face-to-face instruction will have a higher GPA at the time of completing their degree (AA, AS, AAS, AE, AFA, or AGE degree) or transfer to a 4-year institution when compared to those who complete the class in an online format.

Data on students enrolled in ACA 122 will enable statistical analysis of participants and yield comparisons between the instructional methods used in ACA 122.

Case Study Research

Quantitative research is best suited for aggregating and analyzing numerical data as well as examining variables in contrast (Creswell, 2013). This quantitative study utilizes statistical

analysis to restructure a complex problem to a limited number of variables. Additionally, by analyzing two NC community colleges of varying sizes and locations, the quantitative data can be applied to a larger scale. This study sought to determine whether there is a relationship between the instructional modality of ACA 122 and student success. The relationship was examined longitudinally over the course of five years, 2014-2019. Furthermore, student characteristics, and independent variables, are applied in the examination.

Investigating the instructional methods of ACA 122 at PCC and SCC can inform those institutions of the probability of a student population needing extra support to be successful at their institution. Should a correlation between the instructional method and the success of the student present itself, the community college can offer supplemental support and market campus support to the at-risk group. This longitudinal study tracks students who completed ACA 122 between 2014 and 2019. Ending analysis of students who completed ACA in 2019 and looking for the completion of the two-year degree at the close of the Spring of 2021 allows for tracking this population for degree obtainments in a reasonable time frame (completing 15 hours per term for four terms).

Additionally, the non-experimental data collection allows for examining the relationships between the instructional modality of ACA and the student's success in completing the associate degree. The quantitative approach allows for the other variables to be considered when examining data. Other variables such as race, gender, age, and enrollment status (full-time or part-time) were commonly recorded and can also provide insight when predicting the success of the students enrolled in ACA 122.

Knowing more about the impact of online and face-to-face modalities can assist institutions in retaining students and increasing persistence (Lipka, 2013). The purpose of the

FYE course is to provide students with the skills needed to develop, navigate the institution's systems, and build a connection between the student and the institution (Padgett et al., 2013). Having a better understanding of the impact course modality has on the principles of an FYE course can lead to improved course design and expected learning outcomes.

Population

This study analyzes students enrolled in ACA 122 at PCC and SCC between 2014 and 2019 and examines their degree completion (AA, AS, AAS, AE, AFA, or AGE degree) and their final GPA when they completed the degree at the community college. Student characteristics analyzed in this population include:

1. Gender
2. Race
3. Degree Type (AA, AS, AAS, AE, AFA, or AGE degree)
4. Final GPA

A longitudinal research design aids in a better understanding of this scaled population and allows community colleges to better understand if additional support is needed to increase the retention and degree attainment of students based on the instructional method. A better understanding can assist with establishing a support network or establishing an early warning system to support students at community colleges.

Sample and Sampling Procedures

The quantitative ex post facto analysis of the secondary data set of all students at PCC and SCC who complete ACA 122 identifies and validates the sampling strategy. As previously stated, these two community colleges were selected for this study for three primary reasons: location, student enrollment, and the presence of both modalities of ACA 122. Additionally,

demographic information aids in a thorough analysis. Analyzing students enrolled in ACA 122 between 2014 and 2019 allows students to obtain their two-year degree in two years and allows for additional terms to be observed outside of the two-year timeframe. Students who enroll in the Fall term of 2019 provide a maximum time of degree completion of two and a half years to complete their degree. Those enrolled in earlier terms will have an additional semester of degree completion. The additional terms of enrollment allow for analysis of students who are not enrolled in a full-time status (12-hours per term) and are taking classes at a half-time status (6 hours per term). Allowing for additional time for degree completion reduces the limitations of part-time students who are captured in the dataset as continuing and degree-seeking students.

The scaled approach in looking at these students provides data for examination and establishes whether the instructional method of ACA 122 is a predictor of student success. Using student data of those who enrolled in the course between the 2014-2019 academic years compares community colleges in the western and eastern regions of NC. Focusing on these two institutions' ACA 122 allows variations of this class across NC and compares the institutions as well as the modality offered. This non-experimental, longitudinal research design utilized PCC and SCC data to determine whether the ACA 122 instructional modality is statistically significant when viewing the student's success. The research design is appropriate for this study to compare the relationship between instructional modality and success (degree completion and final GPA).

Ethical Considerations and Informed Consent

Pitt Community College and Southwestern Community College Institutional Review Boards (IRB) approved the data sets reviewed in this study. Additionally, this study was approved by East Carolina University's IRB. Informed consent of the students whose data were

shared was not required, and individually identifiable information was not shared, per IRB. Data sets were stored on an institutional device, which was password protected. The electronic data set files and emailed set attachments were deleted within 30 days after the close of this study.

Instrumentation/Procedures

As previously described, this study looked at students enrolled at PCC and SCC in ACA 122 between 2014 and 2019. The instructional method and student data were examined to determine whether the instructional method can be a predictor of the student's success in the class. Statistical software was utilized to compare students enrolled in face-to-face and online ACA 122 courses during this timeframe. Additional student demographics were examined to determine whether age, the program of study, student status (full-time/part-time), or gender impacted the success of the student.

Data Processing and Analysis

The variables connected with the research questions include dependent and independent variables. The dependent variable is the student's success; success is completing the degree at PCC and SCC. The dependent variable was a binary variable, with 0 representing the student who did not complete the associate degree. A binary indicator of 1 represents completing the associate degree. Independent variables in this study include:

1. Gender
2. Race
3. Degree Type (AA, AS, AAS, AE, AFA, or AGE)
4. Final GPA

Anticipated independent variables that were not offered by both institutions in the provided data set included: Age, Timeframe of degree completion, Part-time or Full-time

enrollment, and Pell eligibility. Comparing these variables would determine whether impactful relationships exist by utilizing and comparing descriptive statistics of the population and the modality of ACA 122. The data provided assisted in the analysis of those students who completed ACA 122 under a face-to-face or online course modality and examine degree completion.

To analyze the data in this study, I used univariate descriptive statistics to assess baseline performance at each institution individually and collectively. I then used analysis of variance (ANOVA) techniques to determine whether there are variances between independent variables (student characteristics) and the dependent variable (modality) and whether those patterns vary across institutions.

The inferential statistics of this study guided the analysis of my overarching research question: Does the instructional method of FYE courses at the community college impact a student's success at the community college? Statistics determined if there is a correlation between the instructional modality and student success using a correlation matrix, and the results of multiple regression analysis helped identify whether the variables specified are predictive of student success.

Comparison based on the dependent and independent variables provided insight into the need for institutions to provide additional support (if significance is observed) to aid in student success. The methods by which comparisons were made were T-tests and Tukey-ANOVA, but the effect size needs to be taken into consideration. The effect size is the proportion of the dependent variable's variance based on the independent variable's impact, or manipulation. Additionally, the effect sizes of the tests can offer the proportion of variability in the dependent variable that the independent variable causes. The greater the size means the impact of the

independent variable has a greater impact. The effect size also reinterprets the measured results through standardization. Finally, the effect size offers an understanding of the practical impact based on the sample. Reporting the effect size in research allows the reader to understand is the outcomes are usable or relatable to the whole population. The data set will measure the impact using ANOVA, Cohen's d, and Tukey. In viewing the effect size of the Independent-Means t-Test, there is one formula for the effect size, this is Cohen's D (Cohen, 1988). Cohen's d offers a measurement ranging from small (.20), moderate (.50), and large (≥.80) considering the effect size. ANOVA offers an additional effect size: eta-squared (η^2), the proportion of variance is explained by the dependent variable (Cohen, 1966). ANOVA's effect size offers a measurement ranging from small ($\eta^2 \approx .10$), moderate ($\eta^2 \approx .25$), to large ($\eta^2 \approx .40$). Tukey's HSD (Honestly Significant Difference), also known as Tukey, can identify a small difference between means and measures significance. Finally, utilizing the Newman-Keuls test, also known as Student-Newman-Keuls, is similar to Tukey, but the main difference is this test takes into account the distance between means after they are ordered from smallest to largest; this ordering determines the critical value for the individual comparisons based on distance, thus their significantly different (Keuls, 1952; Newman, 1939). Tukey was utilized in this study based on unequal group sizes among the measured populations.

Role of the Researcher

This research topic provided insight into my role in supporting transfer students. I am the Director of Advising at Western Carolina University (WCU) and have a position connected with the retention and persistence of students at WCU. Gaining additional insight into potential challenges incoming transfer students may face allows schools to increase campus awareness and connection to campus resources to aid students who complete ACA 122 virtually or face-to-face.

Gaining insight on transfer students will assist in providing additional resources to all transfer students and aid in the retention and persistence of transfer students.

Limitations

Identified limitations are separated into three areas: (1) institutional support, (2) student aptitude, and (3) the instructor's ability to teach.

- *Institutional support.* Variations in the community college's student support network impacted the findings. Limitations connected to the campus support resources and intervention mechanisms can vary between these institutions.
- *Student aptitude.* The academic preparedness of students enrolling in ACA 122 impacted this study. The amount of time since a student was enrolled in high school, their final GPA in HS, or the courses they completed, general or advanced curricula (such as Honors or Advanced Placement) affected results.
- *Instructor's ability to teach.* The instructors' ability to convey the materials in the manner best suited for students and variations of instructional methods (technology, group, discussions, quizzes, homework, and examinations). Differences in the instructors' ability to relate the class's learning objectives are a limitation of studying ACA 122 and measuring the success of the course.

Based on the limitations of both the instruction at the institutions, various characteristics of the students enrolled in the class, and the location of the institution, this study generalized the results to assist the institution in having an understanding of variables that impact the success of students within ACA instruction (online or face-to-face). The findings of this study can provide a framework when providing the course to their students. This understanding also aided in the

future development of policies for instruction and practices that are seen as effective in supporting the academic success of students enrolled in ACA 122.

Summary

This research study utilized archived data provided by PCC and SCC to examine the potential impact of the course modality of ACA 122 on student success. The student's success was measured by completing the degree (AA, AS, AAS, AE, AFA, or AGE degree). Within this data, a quantitative design further examined variables that may impact the success of the student enrolled in ACA 122. The results of this research provided insight to PCC and SCC in their programming, outreach, and possible academic interventions to ensure students are retained and persist to degree completion. The results of this study are applicable to other community colleges to understand the level of risk students may be at depending on the modality of the instruction of ACA 122 within North Carolina.

CHAPTER 4: RESULTS

The purpose of this study is to analyze the influence of instructional modality on the success of students enrolled in ACA 122.This chapter provides an overview of the research question and the analysis of the provided data sets from PCC and SCC. The original research question behind this study is as follows: (RQ1) Does the instructional method of FYE courses at the community college impact a student's success at the community college? Success was measured in terms of degree completion within two years and three years from first enrolling in ACA 122, final GPA at the time of degree completion, or transfer to a 4-year institution and GPA at the time of transfer.

- H_1: Students who enroll in ACA 122 offered in a face-to-face instructional format are more likely than those who complete the class in an online format to complete a degree at the community college or transfer to a 4-year institution.
- H_2: Students who enroll in ACA 122 via face-to-face instruction will have a higher GPA at the time of completing their degree (AA, AS, AAS, AE, AFA, or AGE degree) or transfer to a 4-year institution when compared to those who complete the class in an online format.

However, data limitations lead to the refocus of hypotheses on the GPA of degree completer. As such hypotheses are revised as follows:

- H_1: Students who enroll in ACA 122 offered in a face-to-face instructional format are more likely than those who complete the class in an online or hybrid format to complete their degree with a higher GPA.

- H_2: Students who enroll in ACA 122 via face-to-face instruction will have a higher GPA at the time of completing their degree regardless of degree type (AA, AS, AAS, AE, AFA, or AGE degree), race/ethnicity, gender, and Pell eligibility.

The findings and succeeding data analysis lead to a deeper understanding of how modality can potentially impact student success. Success is measured as a competitive GPA of 3.0 or higher.

Summary of Demographic Information and Study Variables

This study utilized 6,577 individual student records indicating registration in ACA 122 at PCC and SCC. Analysis of these records and coding was designed to provide statistical information regarding the influence of modality on student success. The population consisted of students enrolled in ACA 122 between Fall 2014 and Spring 2019. In coding, the data set was determined, and the two institutions that provided data required combining specific data sets to allow for uniform and consistent analysis. The research area where coding required alteration was race; each institution collected these data, but one institution separated "Other/Unknown/ Multiple," whereas the other institution separated "Other/Unknown" and "Multiple." Both institutions reported *Male* and *Female* as gender categories. It was expected that the institutions would offer multiple variations of gender reporting, but this was not observed, as IPEDs utilized binary sex for gender. Final grade reporting of ACA 122 of the 6,577 reported cases also varied. Standard letter grades A, B, C, D, and F were recorded, but each institution varied with recording grades at the time of a course withdrawal (OW, W, and WF); the cases where a withdrawal was recorded were combined as a "W" for analysis and removed. In addition, grades of "I" (Incomplete) or "IP" (In-progress) were removed from the analysis due to the fact that those students had not completed the course and, therefore, could not contribute to measuring the success of completing the class.

The distribution of the coded data is reflected in Tables 2 through 5. The demographics addressed consisted of modality, gender, race and ethnicity, Pell eligibility, and degree program. Table 2 reflects the distribution of modality of ACA 122 course. The face-to-face modality accounted for 44.1% of the data collected, while online was 38.1%, and hybrid provided 17.8% of the population enrolled in the course.

Table 3 provides additional understanding of the breakdown of gender of the students enrolled in the course; 54% were female, and 46% of those enrolled were male. Table 4 provides a breakdown of Race/Ethnicity. The percentage breakdown of Race/Ethnicity was reflected as follows: White/Non-Hispanic 67.8%, Black/Non-Hispanic 12.6%, Hispanic 9.1%, American Indian/Alaska Native 4.0%, Other/Unknown 3.9%, Asian/Pacific Islander 1.8%, and multiple .8%. Table 5 provides an understanding of the degree type pursued. A description of the different degree type is located in Appendix C. Table 5 displays the count and percentage of students completing an AA (62.8%), AAS (22.9%), AFA (3.1%), AGE (2.1%), and AS degree (9.1%).

Research Question 1

Of the students who were enrolled in ACA 122 and were observed in this study, 2,207 students enrolled in the course online, 2,811 enrolled in the course face-to-face, and 1,558 were enrolled in a hybrid modality during the time frame of the assessment. However, due to the course completion and degree completion data provided, as seen in Table 2, 933 face-to-face, 805 online, and 377 hybrid cases were analyzed (2,115 total). Utilizing SPSS, statistical analysis was able to determine if significance was evident in the research question.

Table 2

Distribution of Modality: 2014-2019

Modality	Count	Percent
Face-to-face	933	44.1%
Online	805	38.1%
Hybrid	377	17.8%

Table 3

Distribution of Gender: 2014-2019

Gender	Count	Percent
Men	1,350	46%
Women	1,584	54%

Table 4

Distribution of Race and Ethnicity: 2014-2019

Race/Ethnicity	Count	Percent
American Indian/Alaska Native	116	4.0%
Asian/Pacific Islander	54	1.8%
Black, non-Hispanic	371	12.6%
Hispanic	266	9.1%
Multiple	24	0.8%
Other/Unknown	115	3.9%
White, non-Hispanic	1,988	67.8%

Table 5

Distribution of Student Degree Programs: 2014-2019

Degree Type	Count	Percent
AA	1,325	62.8%
AAS	484	22.9%
AFA	66	3.1%
AGE	44	2.1%
AS	191	9.1%

As previously stated, the research question was:

RQ1 Does the instructional method of FYE courses at the community college impact a student's success at the community college? Success was measured in terms of degree completion within two years and three years from first enrolling in ACA 122, final GPA at the time of degree completion, or transfer to a 4-year institution and GPA at the time of transfer.

- H_1: Students who enroll in ACA 122 offered in a face-to-face instructional format are more likely than those who complete the class in an online or hybrid format to complete their degree with a higher GPA.
- H_2: Students who enroll in ACA 122 via face-to-face instruction will have a higher GPA at the time of completing their degree regardless of degree type (AA, AS, AAS, AE, AFA, or AGE degree), race/ethnicity, gender, and Pell eligibility.

The demographic variables utilized for this study include race/ethnicity, gender, degree pursued, Pell eligibility, and GPA (if completing a degree at a two-year institution). When looking at the research question, based on this assessment, it was determined the instructional modality does influence the student's success.

Major Finding 1: Impact of Modality on Degree Completion

The impact of modality on degree completion was assessed based on the GPA at degree completion.

- H_1: Students who enroll in ACA 122 offered in a face-to-face instructional format are more likely than those who complete the class in an online or hybrid format to complete their degree with a higher GPA.

ANOVA results indicate a statistically significant difference in student GPAs by modality (*MSW* = 467.155; *MSB* = 1.917; $F_{(2114)} = 8.66$; $p<.001$). See Table 6. As seen in Figure 4, GPA at the

completion of the degree was statistically meaningful; the hybrid modality's mean is .09 lower than face-to-face, and .123 lower than online when comparing the subsets. The effect size of the results is significant ($\eta^2 = .08$). A Cohen's d was utilized to calculate practical effects ($d = .370$), indicating a small to moderate effect numerically. The mean difference in GPA (*Mdifference*=0.12) indicates with no real-world effect between face-to-face and online found in Table 4. Table 7 provides the standard deviation among modality types: Face-to-face (0.48), Online (0.47), and hybrid (0.45), including the lower and upper bounds of the GPA. Table 8 reflects the homogeneity of variances, and, assuming the equal means, includes a mean and median of 3.342 with degrees of freedom (*df*=2). Given the statistically significant finding, I used the Tukey HSD to clearly identify the point of statistically significant differences among modalities (see Table 8). There is a statistically significant lower GPA registered by the hybrid modality as compared to the face-to-face and online modalities (see Table 9). This difference, however, is not pragmatically important. The first hypothesis, which is that students who were enrolled in ACA 122 in the face-to-face instructional format will have a higher GPA at the time of completing their degree or transfer, is rejected based on the fact that face-to-face and online modalities did not reveal significance in the final GPA.

Major Finding 2: Impact of Modality on Success

In regard to Hypothesis 2:

H_2: Students who enroll in ACA 122 via face-to-face instruction will have a higher GPA at the time of completing their degree regardless of degree type (AA, AS, AAS, AE, AFA, or AGE degree), race/ethnicity, gender, and Pell eligibility.

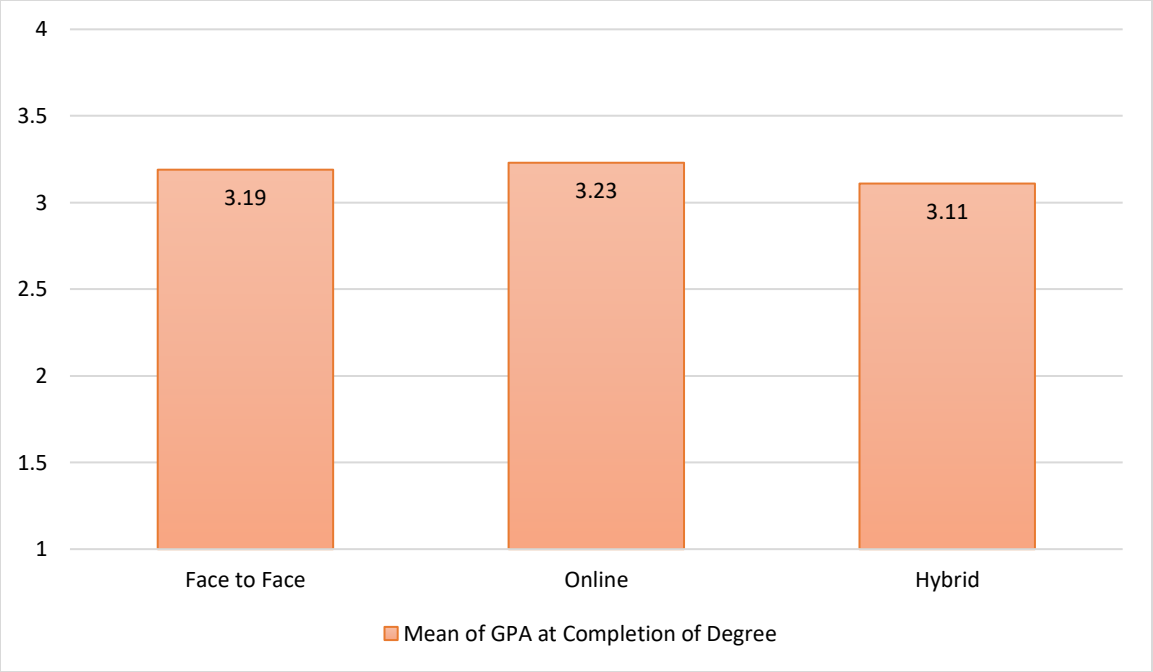


Figure 4. Impact of modality on final GPA.

Table 6

ANOVA GPA at Completion of Degree

Comparison of GPA	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.834	2	1.917	8.666	<.001
Within Groups	467.155	2112	.221		
Total	470.989	2114			

Table 7

GPA at Completion of Degree

Modality	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Face-to-face	933	3.19923	.480526	.015732	3.16835	3.23010
Online	805	3.23029	.468325	.016506	3.19789	3.26269
Hybrid	377	3.10859	.448437	.023096	3.06318	3.15401
Total	2115	3.19490	.472012	.010264	3.17477	3.21502

Table 8

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2
GPA at Completion of degree	Based on Mean	3.342	2	2112
	Based on Median	3.342	2	2112
	Based on Median and with adjusted df	3.342	2	2110.105
	Based on trimmed mean	3.343	2	2112

Table 9

Tukey Comparison of Modality and Final GPA

Assessment Tool	modality	N	Subset 1	Subset 2
Tukey HSD[a,b,c]	Hybrid	377	3.10859	
	Face to Face	933		3.19923
	Online	805		3.23029
	Sig.		1.000	.471

Note. Means for groups in homogeneous subsets are displayed. Based on observed means.
The error term is Mean Square (Error) = .213.

The range, means, and standard deviations of final GPA by degree types is found in Table 10. The AS degree had the highest mean GPA (M = 3.355; SD = .458). The lowest mean GPA was registered by AGE degree (M = 3.088; SD = .408).

ANOVA was used to determine whether these differences were statistically significant. Table 11 provides ANOVA results. Statistically significant differences were found (MSW = 462.336; MSB = 7.234; $F_{(2109)}$ = 8.234; p=<.001). Keuls and a Tukey HSD were used to identify where differences arose between the average GPAs of each degree type (see Table 12). The mean differences, or the absolute difference between the mean value, ranged from 3.088 and 3.355. Students with AS degrees (M = 3.355; SD= .458) had a statistically higher GPA than students with AGE degrees (M = 3.088; SD = .408; $M_{difference}$ = .247). Students with an AS degree also had a statistically significant higher GPA than students with AAS degrees (M = 3.153; SD = .438; $M_{difference}$ = .202). These differences by modality are depicted in Figure 5. The ratio of the variances, an F-value of 8.234 and a p-value of <.001 reflects the interaction between variables. Keuls reflected a .29, .055, and .424 between subsets (online, face-to-face, and hybrid

As seen in Table 10, the standard deviation among degree types is AA (.484), AAS (.438), AFA (.436), AGE (.407, and AS (.458), including the lower and upper bounds of the GPA. The homogeneity of variances, and, assuming the equal means, includes a mean of 3.808, a median of 3.866 with four degrees of freedom. The small to moderate effect reflected by Cohen's d was .370;thus, no real-world effect between degree types and modality. Therefore, based on the assessment conducted, hypothesis 2 is rejected because the face-to-face and online modalities have the same level of significance of GPA when compared. As seen in Table 13, the Keul's output reflects that there is no interaction between degree types, modality, and student success.

Table 10

Descriptive Statistics of Degree Type

Degree Type	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum
					Lower Bound	Upper Bound	
AA	1325	3.18294	.484220	.013303	3.15684	3.20904	1.670
AAS	484	3.15367	.437534	.019888	3.11459	3.19275	1.870
AFA	66	3.30471	.436850	.053773	3.19732	3.41210	2.490
AGE	44	3.08768	.407825	.061482	2.96369	3.21167	2.040
AS	191	3.35545	.458141	.033150	3.29006	3.42083	2.196
Total	2110	3.19366	.471859	.010272	3.17352	3.21381	1.670

Table 11

ANOVA Test of Degree Type

Comparison	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.234	4	1.808	8.234	<.001
Within Groups	462.336	2105	.220		
Total	469.570	2109			

Table 12

Comparison Between Degree Types

Test Type	(I) Degree Type	(J) Degree Type	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound
Tukey HSD	AA	AAS	.029270	.024891	.765	-.03869
		AFA	-.121771	.059107	.238	-.28314
		AGE	.095259	.071816	.675	-.10081
		AS	-.172504*	.036273	<.001	-.27153
	AAS	AA	-.029270	.024891	.765	-.09723
		AFA	-.151041	.061495	.101	-.31893
		AGE	.065990	.073794	.899	-.13548
		AS	-.201774*	.040047	<.001	-.31111
	AFA	AA	.121771	.059107	.238	-.03960
		AAS	.151041	.061495	.101	-.01685
		AGE	.217030	.091212	.121	-.03199
		AS	-.050733	.066916	.942	-.23342
	AGE	AA	-.095259	.071816	.675	-.29133
		AAS	-.065990	.073794	.899	-.26746
		AFA	-.217030	.091212	.121	-.46605
		AS	-.267763*	.078369	.006	-.48172
	AS	AA	.172504*	.036273	<.001	.07347
		AAS	.201774*	.040047	<.001	.09244
		AFA	.050733	.066916	.942	-.13196
		AGE	.267763*	.078369	.006	.05380

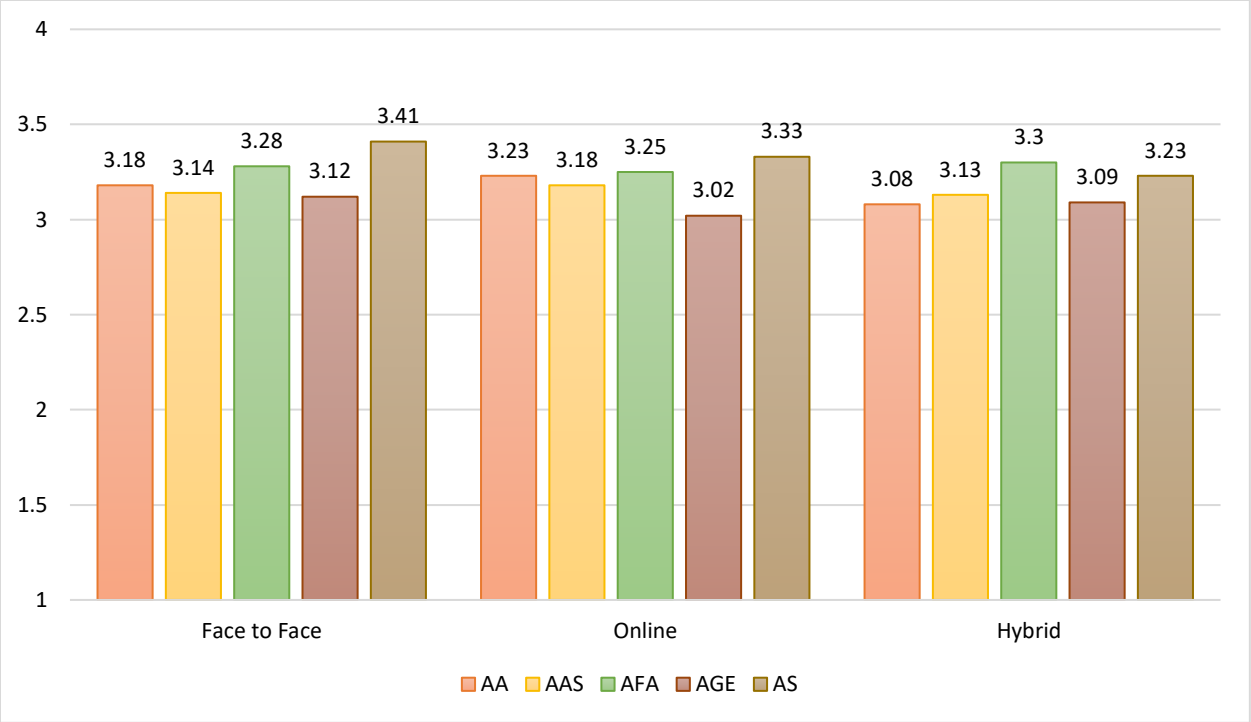


Figure 5. Comparison of final GPA, modality, and degree type.

Table 13

Comparison of Final GPA, Modality, and Degree Type

Assessment Tool	Degree	N	Subset 1	Subset 2	Subset 3
Student-Newman-Keuls[a,b,c]	AGE	44	3.08768		
	AAS	484	3.15367		
	AA	1325	3.18294	3.18294	
	AFA	66		3.30471	3.30471
	AS	191			3.35545
	Sig.		.290	.055	.424
Tukey HSD[a,b,c]	AGE	44	3.08768		
	AAS	484	3.15367	3.15367	
	AA	1325	3.18294	3.18294	3.18294
	AFA	66		3.30471	3.30471
	AS	191			3.35545
	Sig.		.561	.120	.051

Based on this assessment, there is not a statistically significant impact on completing a particular degree type and ACA 122 modality type.

Influence of Student Demographics and Modality on Success

As previously stated, GPA is a continuous variable. Looking at student demographics as measured in this study, gender is a nominal-level dichotomous variable (only two categories in the variable). Ethnicity, Pell status, degree type, and modality are all nominal-level polytomous variables (more than two levels in the variables).

Student GPAs by race ranged from 2.115 (*SD*= 1.115) for American Indian/Alaska Native in the face-to-face modality to 3.43(*SD*= .464) for Asian/Pacific Islander in the hybrid modality. When viewing Pell eligibility, GPAs ranged from an average of 2.682 (*SD*= .983) for males who were Pell eligible to 2.923 (SD= .854) for females who were Pell eligible. Comparatively, non-Pell eligible males have an average GPA of 2.811 (*SD*= .914), and female non- Pell eligible students have an average GPA of 3.059 (*SD*= .769).

A correlation matrix utilizing Pearson's coefficients was calculated, because of the one continuous variable, GPA. It would be mathematically inconsequential to calculate correlations on nominal-level variables with more than two categories for several reasons. The values assigned to each category within each variable are entirely arbitrary. The assigned numbers simply differentiate between one group and another and have no inherent mathematical properties. However, this exercise is useful to observe whether there are statistically significant relationships between GPA and each of the demographic characteristics measured.

As seen in Table 14, correlations among demographic variables with GPA were calculated, but based on the assigning of a numerical values, the only variable to be a factor influenced by GPA outside of modality is gender.

Table 14

Correlations among Variables

Variable	Test Type	GPA at Completion of degree	Gender	Pell Eligible	Race/ Ethnicity
GPA at Completion of degree	Pearson Correlation	1	.133**	-.065**	.057**
	Sig. (2-tailed)		<.001	<.001	.002
	N	2934	2934	2934	2934
Gender	Pearson Correlation	.133**	1	.076**	-.044**
	Sig. (2-tailed)	<.001		<.001	<.001
	N	2934	6576	6576	6576
Pell Eligible	Pearson Correlation	-.065**	.076**	1	-.303**
	Sig. (2-tailed)	<.001	<.001		<.001
	N	2934	6576	6576	6576
Race/Ethnicity	Pearson Correlation	.057**	-.044**	-.303**	1
	Sig. (2-tailed)	.002	<.001	<.001	
	N	2934	6576	6576	6576
Modality	Pearson Correlation	.165**	.048**	.063**	-.077**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	2934	6576	6576	6576
Degree Type	Pearson Correlation	.567**	.057**	-.133**	.155**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	2934	6576	6576	6576

Note. **Correlation is significant at the 0.01 level (2-tailed).

Influence of Race/Ethnicity and Modality on Student Success

ANOVA analysis of ethnicity and modality offered an observed interaction of statistical significance in student ethnicity and by modality (*MSW*=464.663; *MSB*=1.912; $F_{(2114)}$=10.6; p<.001). See Table 15. Student-Newman-Keul's analysis reflected that American Indian/Alaska Native underperformed Other/Unknown, Hispanic, Black, and White races (with significance). Additionally, those populations were not as successful as Asian/Pacific Islander and Multiple races, as seen in the Keul's assessment in Figure 6. Table 16 provides comparison of GPA and modality by race/ethnicity. ANOVA analysis of ethnicity and modality offered an observed interaction. Student-Newman-Keul's analysis demonstrated that American Indian/Alaska Native students underperformed Other/Unknown, Hispanic, Black, and White races (with significance). As seen in Table 16, there was significance observed between American Indian/Alaska Native and Other/Unknown, Hispanic, Black, and White. Other/Unknown, Hispanic, Black, and White yielded significance with Asian/Pacific Islander and Multiple races. Table 16 reflects the Mean Difference between Race/Ethnicity, and Table 17 reflects each modality through standard error, significance, and lower and upper bounds within a 95% confidence interval. Table 18 provides the test between subjects sum of squares, degrees of freedom, mean square, F-value, and significance score. Table 19 reflects the comparison of race/ethnicity and modality type in regard to the sum of squares, mean square, and significance. Additionally, those populations' modality and GPA differences are visualized in Figure 6.

As previously stated, ACA 122 online and face-to-face platforms are associated with student success. Students who complete a hybrid method are less likely to be successful. This could be based on the varying modality throughout the term, or inconsistent course meeting types could lead to confusion, missed assignments, or missed meetings. Student who were

Table 15

Calculation of Significance of Race/Ethnicity

Assessment Type	Race/Ethnicity	Count	1	2	3
Student-Newman-Keuls[a,b,c]	American Indian / Alaska Native	116	2.28465		
	Other / Unknown	115		2.66702	
	Hispanic	266		2.84730	
	White	1988		2.91170	
	Black	371		2.92433	
	Multiple	24			3.26375
	Asian / Pacific Islander	54			3.30896
	Sig.		1.000	.218	.735

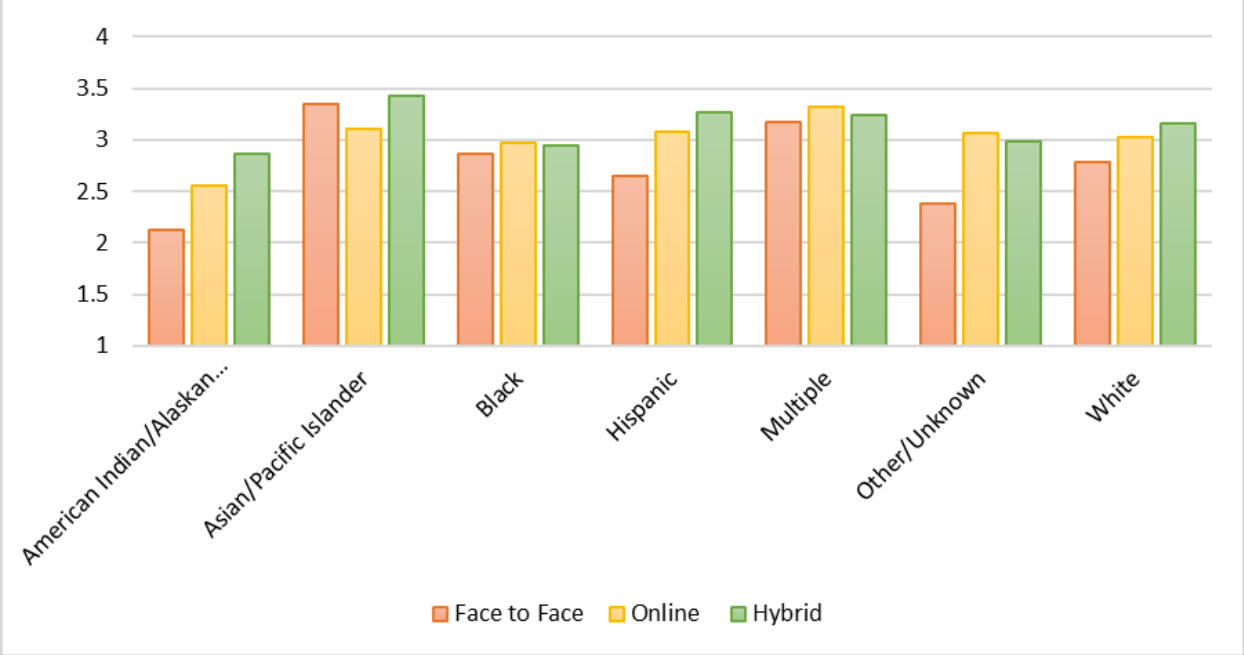


Figure 6. Comparison of instructional method, race and final GPA.

Table 16

Pairwise Comparison of Race/Ethnicity and Modality

Race/ Ethnicity	(I) Modality	(J) Modality	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
American Indian / Alaska Native	Face to Face	Online	-.443*	.168	.008	-.773	-.113
		Hybrid	-.745	.617	.228	-1.955	.466
	Online	Face to Face	.443*	.168	.008	.113	.773
		Hybrid	-.302	.624	.629	-1.525	.921
	Hybrid	Face to Face	.745	.617	.228	-.466	1.955
		Online	.302	.624	.629	-.921	1.525
Asian / Pacific Islander	Face to Face	Online	.236	.288	/.412	-.329	.801
		Hybrid	-.079	.357	.825	-.778	.621
	Online	Face to Face	-.236	.288	.412	-.801	.329
		Hybrid	-.315	.410	.442	-1.118	.488
	Hybrid	Face to Face	.079	.357	.825	-.621	.778
		Online	.315	.410	.442	-.488	1.118
Black	Face to Face	Online	-.104	.105	.322	-.309	.102
		Hybrid	-.078	.114	.494	-.301	.146
	Online	Face to Face	.104	.105	.322	-.102	.309
		Hybrid	.026	.113	.820	-.196	.248
	Hybrid	Face to Face	.078	.114	.494	-.146	.301
		Online	-.026	.113	.820	-.248	.196
Hispanic	Face to Face	Online	-.435*	.116	<.001	-.662	-.208
		Hybrid	-.613*	.186	<.001	-.977	-.249
	Online	Face to Face	.435*	.116	<.001	.208	.662
		Hybrid	-.177	.196	.365	-.561	.206
	Hybrid	Face to Face	.613*	.186	<.001	.249	.977
		Online	.177	.196	.365	-.206	.561
Multiple	Face to Face	Online	-.156	.465	.738	-1.067	.755
		Hybrid	-.073	.491	.881	-1.036	.890
	Online	Face to Face	.156	.465	.738	-.755	1.067
		Hybrid	.082	.400	.837	-.702	.867
	Hybrid	Face to Face	.073	.491	.881	-.890	1.036
		Online	-.082	.400	.837	-.867	.702

Table 16 (continued)

Race/ Ethnicity	(I) Modality	(J) Modality	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
Other / Unknown	Face to Face	Online	-.676*	.173	<.001	-1.015	-.337
		Hybrid	-.601*	.293	.040	-1.175	-.028
	Online	Face to Face	.676*	.173	<.001	.337	1.015
		Hybrid	.075	.305	.806	-.522	.672
	Hybrid	Face to Face	.601*	.293	.040	.028	1.175
		Online	-.075	.305	.806	-.672	.522
White	Face to Face	Online	-.240*	.042	<.001	-.322	-.158
		Hybrid	-.377*	.063	<.001	-.501	-.253
	Online	Face to Face	.240*	.042	<.001	.158	.322
		Hybrid	-.137*	.066	.037	-.266	-.008
	Hybrid	Face to Face	.377*	.063	<.001	.253	.501
		Online	.137*	.066	.037	.008	.266

Note. Based on estimated marginal means.

*. The mean difference is significant at the .050 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Table 17

Comparison of Race/Ethnicity and Modality

Modality	Race/Ethnicity	Mean	Std. Error	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Face to Face	American Indian / Alaska Native	2.115	.101	1.918	2.313
	Asian / Pacific Islander	3.351	.146	3.066	3.637
	Black	2.865	.075	2.718	3.011
	Hispanic	2.649	.069	2.513	2.785
	Multiple	3.168	.385	2.413	3.923
	Other / Unknown	2.380	.107	2.170	2.589
	White	2.781	.027	2.729	2.834
Online	American Indian / Alaska Native	2.558	.135	2.294	2.822
	Asian / Pacific Islander	3.115	.249	2.627	3.602
	Black	2.968	.073	2.825	3.112
	Hispanic	3.084	.093	2.902	3.266
	Multiple	3.324	.260	2.814	3.833
	Other / Unknown	3.056	.136	2.789	3.323
	White	3.021	.032	2.959	3.084
Hybrid	American Indian / Alaska Native	2.860	.609	1.666	4.054
	Asian / Pacific Islander	3.430	.326	2.792	4.068
	Black	2.943	.086	2.774	3.112
	Hispanic	3.262	.172	2.924	3.599
	Multiple	3.241	.305	2.644	3.838
	Other / Unknown	2.981	.272	2.447	3.515
	White	3.158	.057	3.046	3.271

Table 18

ANOVA Race/Ethnicity at Completion of Degree

Comparison	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.143	3	1.912	10.055	<.001
Within Groups	464.663	2111	.220		
Total	469.806	2114			

Table 19

Comparison of Race/Ethnicity and Modality – Type III

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	137.740[a]	20	6.887	9.283	<.001
Intercept	2698.562	1	2698.562	3637.582	.000
Race/Ethnicity	11.890	6	1.982	2.671	.014
Modality	8.850	2	4.425	5.965	.003
Race/Ethnicity * Modality	15.396	12	1.283	1.729	.055
Error	2161.027	2913	.742		
Total	26689.823	2934			
Corrected Total	2298.767	2933			

enrolled in face-to-face or online modalities could offer consistency in course expectations or processes regarding assignment submission.

Uniform expectations and course discussions, whether face-to-face or online, impacts students to meet the learning outcomes of the course and be successful, as defined in this study.

Influence of Gender, Pell-Eligibility, and Modality on Student Success

This study was also able to analyze the influence of gender and modality of ACA 122. The measured student success revealed that while males do have a lower GPA, there was no statistical significance between gender and modality on the success of the student (M_{male} =2.76 (SD= .945); M_{female}=2.99; (SD= .815). ANOVA results indicate there was not a statistically significant difference in student GPAs by Gender (*MSW* = 43.128; *MSB* = 1.917; $F_{(2933)}$ = 43.128; p<.001). The mean difference, equal variances assumed, of GPA (*Mdifference*=-0.235) indicates no real-world effect between gender and modality even though a measurable difference was observed. See Table 20.

Table 21 provides a comparison of the count of gender and Pell-eligible students in the study. The number of Pell eligible students was 1360, 46% of the sample population. ANOVA results indicate there is a statistically significant difference in student GPAs by Pell eligibility (*MSW* = 462.336; *MSB* = 1.808; $F_{(2109)}$ = 8.234; p<.001). See Table 22. Table 23 compares Gender and Pell eligibility on GPA at the time of degree completion with no statistical significance. A Pearson correlation of Pell eligibility and GPA at the completion of degree did reveal a statistically significant correlation of -.065 (p<.001), demonstrating an expected inverse relationship between Pell eligibility and GPA. The correlation is significant at the 0.01 level, and is negative and strong. Students who are Pell eligibility statistically will have a lower final GPA, Table 24 reflects the tests between subject. A visual of the comparison of PELL eligibility,

Table 20

Comparison of GPA at Completion of Degree: Gender and Pell

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	53.195[a]	3	17.732	23.136	<.001
Intercept	23694.026	1	23694.026	30915.731	.000
Gender	43.128	1	43.128	56.273	<.001
Pell	12.591	1	12.591	16.429	<.001
Gender * Pell	.010	1	.010	.013	.910
Error	2245.572	2930	.766		
Total	26689.823	2934			
Corrected Total	2298.767	2933			

Table 21

Comparison of Gender and Pell

Variable	Coding	Value Label	N
Gender	1	Male	1,350
	2	Female	1,584
PELL Eligible	0	No	1,574
	1	Yes	1,360

Table 22

Pell Eligibility at Completion of Degree

Comparison	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.234	4	1.808	8.234	<.001
Within Groups	462.336	2105	.220		
Total	469.570	2109			

Table 23

Correlations among Variables

Variable	Test Type	GPA at Completion of degree	Gender	Pell Eligible	Race/ Ethnicity
GPA at Completion of degree	Pearson Correlation	1	.133**	-.065**	.057**
	Sig. (2-tailed)		<.001	<.001	.002
	N	2934	2934	2934	2934
Gender	Pearson Correlation	.133**	1	.076**	-.044**
	Sig. (2-tailed)	<.001		<.001	<.001
	N	2934	6576	6576	6576
Pell Eligible	Pearson Correlation	-.065**	.076**	1	-.303**
	Sig. (2-tailed)	<.001	<.001		<.001
	N	2934	6576	6576	6576
Race/Ethnicity	Pearson Correlation	.057**	-.044**	-.303**	1
	Sig. (2-tailed)	.002	<.001	<.001	
	N	2934	6576	6576	6576
Modality	Pearson Correlation	.165**	.048**	.063**	-.077**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	2934	6576	6576	6576
Degree Type	Pearson Correlation	.567**	.057**	-.133**	.155**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	2934	6576	6576	6576

Note. **Correlation is significant at the 0.01 level (2-tailed).

Table 24

Tests of Between-Subjects Effects Gender and Modality

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Gender	18.162	1	18.162	24.184	<.001	.008
Modality	58.512	2	29.256	38.956	<.001	.026
Gender* Modality	1.579	2	.789	1.051	.350	.001
Error	2198.904	2928	.751			
Total	26689.823	2934				

gender, and final GPA is observed in Figure 7. In conclusion, although gender did not reveal statistically significant impact on GPA, Pell eligibility and race/ethnicity did reflect a significant impact on student success.

Summary of Results

Of the students who were enrolled in ACA 122 and were observed in this study, 2,207 students enrolled in the course online, 2,811 enrolled in the course face-to-face, and 1,558 were enrolled in a hybrid modality during the time frame of the assessment. However, due to the provided course completion and degree completion data provided, 933 face-to-face, 805 online, and 377 hybrid cases were analyzed (2,115 total). Using SPSS to analyze the data from SCC and PCC, statistical analysis determined whether significance was evident in the research question. As previously stated, the research question was:

RQ1 Does the instructional method of FYE courses at the community college impact a student's success at the community college? Success was measured in terms of degree completion within two years and three years from first enrolling in ACA 122, final GPA at the time of degree completion, or transfer to a 4-year institution and GPA at the time of transfer.

- H_1: Students who enroll in ACA 122 offered in a face-to-face instructional format are more likely than those who complete the class in an online or hybrid format to complete their degree with a higher GPA.
- H_2: Students who enroll in ACA 122 via face-to-face instruction will have a higher GPA at the time of completing their degree regardless of degree type (AA, AS, AAS, AE, AFA, or AGE degree) , race/ethnicity, gender, and Pell eligibility.

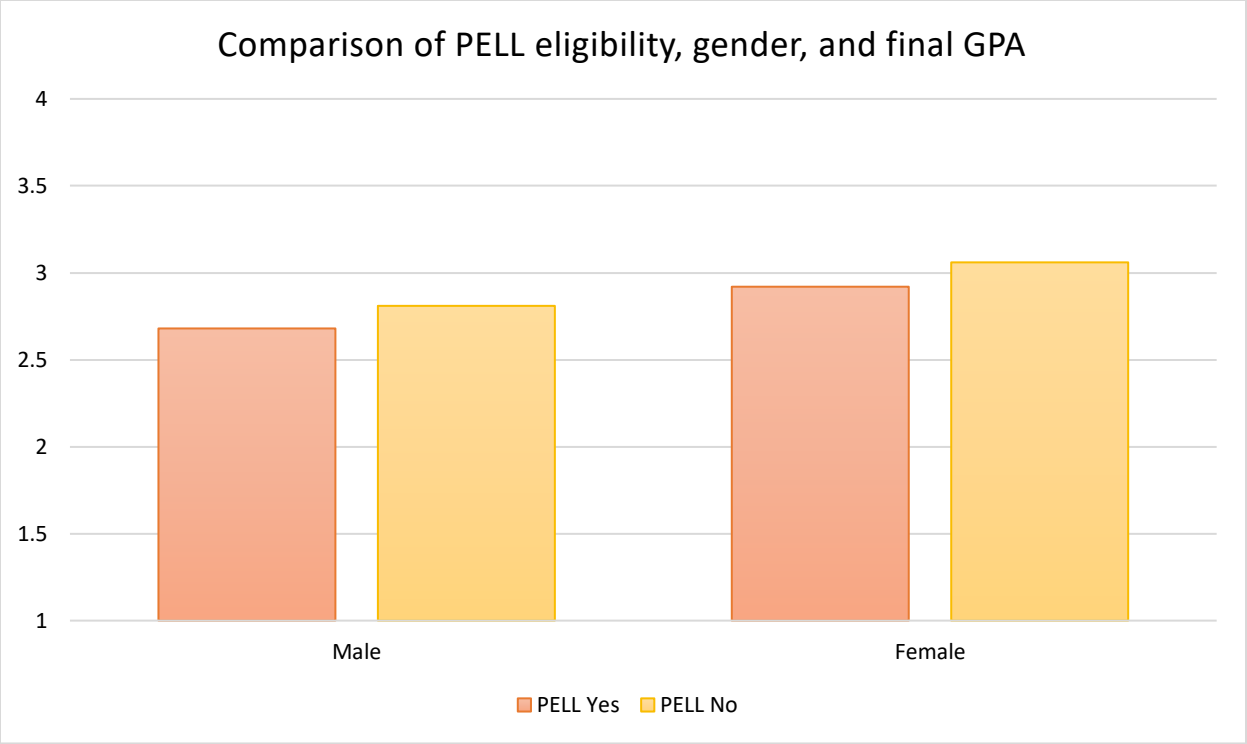


Figure 7. Comparison of Pell eligibility, gender, and final GPA.

- The results of the analysis showed that there was an association between instructional modality and student success. This study found that of the 2,115 students who enrolled in ACA 122 and completed their degree, the face-to-face and online modalities were comparable. As seen in Figures 5 and 6, the hybrid modality showed a negative association with student performance. When measuring the effects of gender, degree type, and Pell eligibility, it was determined that these variables do not impact the success of students enrolled in the course. Statistically, students are at an advantage based on the face-to-face and online modalities.

CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study used existing data provided by Pitt Community College (PCC) and Southwestern Community College (SCC) on students enrolled in the North Carolina Community College System's first-year experience course, ACA 122, from 2014 to 2019 and examined the course modality and student GPA at the time of degree completion or at the time of transferring to a senior institution. The investigation of the modality of students enrolled uncovered that the face-to-face modality and online modality had the same impact on the student's success.

Before the COVID-19 pandemic (pre-2020), almost 50% of all community college students had taken an online course (Jaggers, 2014; Keup, 2014). Course instruction moved to 100% online during the pandemic, and since the COVID-19 pandemic, students are likely to complete the course online. A better understanding of how one type of modality can better contribute to students' success and aid in their transition to college and degree completion will benefit the institution and their graduates with careers post-graduation (Bers & Younger, 2014). In this study, the hybrid modality was associated with a lower success rate (measured in terms of GPA) for students enrolled. A better understanding of the impact of the modality of this FYE course might assist other institutions in designing and delivering the modality, offer additional support to the modality that does not yield the same level of success, and apply this knowledge to other core or required courses.

Summary of Findings

The research questions in this study found an association between the course modality of ACA 122 and student success at two NC community colleges. The analysis of data sets indicated differences in online and face-to-face modality, but those were not statistically significant when looking at the success of the student. The modality where statistical significance was observed

was that of the hybrid modality; the students enrolled in the hybrid modality were found to be less successful (in terms of GPA at the time of degree completion/transfer). In addition to looking at the question of the study, we can analyze other variables provided by the two participating community colleges.

The study looked at gender and degree type and whether either of these variables was associated with success in combination with modality. If either gender or degree type reflected a statistically significant impact, institutions could reflect on methods to intervene or to link with the lesser-performing population. On average, males had a lower GPA than females, but the findings were not statistically significant. The degree type provided uniformity and no statistical significance between the different degree type completion and modality of ACA 122. Therefore, we can assume the average GPA based on the modality of ACA 122 through a lens of gender or degree type pursued was not statistically impacted.

A third variable measured in combination with that of modality and success of students enrolled in ACA 122 between 2014 and 2019 was that of race/ethnicity. The data showed that some races/ethnicities had a higher GPA. American Indian/Alaska Native underperformed Other/Unknown, Hispanic, Black, and White races (with significance). The Asian/Pacific Islanders and Multiple categories outperformed the other areas. Based on the data, all races were less successful in the hybrid modality, significantly impacting GPA between classifications. The least-performing significant group was that of American Indian/Alaska Natives, who achieved an average GPA of 2.28. The middle groups with no statistical significance between them (Other/Unknown, Hispanic, Black, and White) had an average GPA of 2.84. The highest-performing groups with no statistical significance between them were Asian/Pacific Islanders and Multiple; these groups had an average GPA of 3.29. This calculation revealed an entire letter

grade difference between the lowest and highest-performing populations at the time of degree completion. The intense variation of the final GPA of these categories draws focus and concern later in this chapter.

Moreover, this study assessed gender, degree type, and race as subpopulations. The subpopulation that revealed significant influence was that of race/ethnicity. A better understanding of the impact of modality on race/ethnicity will educate institutions on methods to increase enrolled student populations and justify offering classes in the online or face-to-face format (Jaggers, 2014). Anderson's Online Learning Model explains how interaction in the online modality supports different online classroom types (asynchronous or synchronous), and learning environments (self-paced, independent study, structured learning, and community learning) can have the same impact as a face-to-face modality. Online FYE courses can be connected to these variables, and their impact can be assessed and compared to that of face-to-face instruction (Picciano, 2017). The literature reviewed for this study supported online education as an effective modality (Karp et al., 2017). The challenges students face in the online setting can be offset by interventions where online students are supported in the same manner as face-to-face students; this could be in the form of faculty-student communication, discussion boards, recorded campus seminars and presentations, and opportunities to review campus services and policies (Buckley et al., 2021). This is continued through this study, as there were no significant differences in the course of the targeted learning outcomes. As seen in Appendix B, the ACA 122 syllabus template identifies the targeted learning outcomes. The learning outcomes are the same for all modalities, and regardless of modality, there is no practical impact on student GPA.

This study confirmed that online modality was comparable – in terms of students' success based on ACA 122 – to the face-to-face modality. As seen in this research, it is interpreted that FYE courses, such as ACA 122, are a method of supporting students through academic and social education at the curriculum level and support student success (Karp et al., 2017). Students who complete ACA 122 and complete the degree or transfer to a senior institution have a successful final GPA (a GPA greater than 3.0). Likewise, the online FYE course did not impede students in an online modality from being successful compared to face-to-face. As proposed earlier, improved communication and appreciation for the institution and/or program can be fostered online if communication and interaction are present and comparable to that of face-to-face instruction (Buchanan, 2004).

Discussion of Findings

A conclusion that can be drawn from this study is that the hybrid instructional modality of ACA 122 is associated with a lower GPA at the time of degree completion. Additional research should be conducted to further explore this observation. North Carolina community colleges need to know more about the impact of modality and ACA 122 on student success; a better understanding of the impact of online and face-to-face modalities will further assist institutions in student retention and degree attainment (Lipka, 2013; Padgett et al., 2013). The primary purpose of ACA 122 is to equip students with the skills and institutional knowledge to develop, navigate the institution's systems/policies, and build a connection/sense of belonging (Padgett et al., 2013). More extensive data and a deeper understanding of the data will allow institutions to achieve these aims.

Based on the data provided, online and face-to-face modalities were not significantly associated with the primary measure of student success in ACA 122. Gender and degree type

pursued did not considerably impact success when separated by modality. However, in addition to the hybrid modality showing a statistically significant negative association, race/ethnicity did provide statistical significance. Again, the hybrid modality showed a negative association with the student's success; the divide between race/ethnicity triggers a deeper examination into race/ethnicity and student performance when associated with instructional modality. As seen in Figure 6, race/ethnicity was also associated with a level of impact. Significance was observed when studying race/ethnicity; American Indian/Alaska Native underperformed Other/Unknown, Hispanic, Black, and White races, and those populations were not as successful as Asian/Pacific Islander and Multiple. The measured impact of race/ethnicity was observed, but the samples of those races at these schools likely vary greatly from those of colleges with higher enrollment numbers or students of varying ethnic backgrounds. When examining the impact of race/ethnicity on success, it should also be taken into account that other non-measured factors could impact the results. Potential influencers could include financial ability (for example, access to dependable internet), and cultural views of not only continued higher education but also utilizing the internet could have an impact on students in the hybrid and online courses when compared (Urtel, 2008). Additionally, the socioeconomic status of the students enrolled and the identified race/ethnicity should be considered. An investigation into the likelihood of breaking enrollment, employment/family financial contribution, or decrease in the level of commitment to completing a degree among different among races can provide deeper insight.

Since the onset of the COVID-19 pandemic, institutions have moved to online instruction of this course and of other courses at the institutions. Since this study was looking at two community colleges with statistically significant findings, the practical significance must be considered. Although the hybrid modality was significantly lower than the online and face-to-

face modalities, the range of the final GPAs was separated by .12. This difference is less than the difference of +/- of a letter grade. The average hybrid GPA was 3.10859, face-to-face was 3.19923, and online averaged 3.23029. The reader needs to consider the practical results compared to the statistical results; this study did show impact, but at the time, pre-pandemic, the real-world impact is minute considering the range of final GPAs. Additionally, since many institutions moved to online education during the pandemic and now, post-pandemic, returned to utilizing all three modalities, revisiting this research can be beneficial. Has a balance between the modalities resulted from an institutional understanding of need? Are students better equipped to succeed in one platform than the other since experiencing online education? Are students more successful in an online modality over a face-to-face modality due to pandemic learning? Ongoing assessments are necessary for institutions to understand the impact of modality as well as monitor the recent changes in online learning platforms and course design. The course's learning outcomes may also change and offer the need for continued evaluation based on the advancement of the institution's learning tools and course platforms.

Ongoing and more extensive research is needed to understand if internet access could be associated to the outcomes or if they were linked to challenges with the course's learning outcomes. An additional component for better understanding is knowing if a student prefers one form of modality prior to enrolling in a class and then measuring their success at the time of degree completion may lead to a better understanding of preference versus success. Comparing the student's expectations and performance prior to enrolling in the course, at the time of course completion, and again at the time of degree completion/transferring can provide an extensive review of variables.

The literature review addressed different theories related to student success in FYE courses; at this point, we need to recall the theories associated with the student not continuing enrollment through degree completion. Linking the student departure theory to ACA 122 and looking for methods to better understand the student population and their academic continuation is needed. The Theory of Student Departure, also known as the Student Integration Model, was Tinto's description of the three principal sources for a student to separate from an institution. These three main areas of student departure should be assessed in future studies of modality and ACA 122. Knowing which area led to the separation and paired with modality can aid future research and support enrollment. Knowing if the separation resulted from academic difficulties, the inability of the student to resolve their educational and occupational goals, or the failure to become or remain joined and connected institution will be beneficial. Understanding the reasons for separation and instructional methods could provide insight into why the student separated from the institution and did not complete the degree. A better understanding of separation can aid in future supports, policies, and initiatives by institutions to aid in retention and degree completion (Rafiq et al., 2014; Shi et al., 2021; Tanyel & Griffin, 2014). Although FYE courses, on average, correlate to students with a higher first semester GPA and assist in connecting students with major and occupational possibilities, it does not guarantee that students will stay true to that direction. Continued data collection on student intention and progress can provide additional insights (Shi et al., 2021). If community colleges were to uniformly assess students prior to enrolling in ACA 122, at the time of course completion, and at the time of separation, we could gain a deeper understanding of the class, the student's perspective, and the challenges the student faced, which led to institutional separation.

As previously reviewed, Vincent Tinto's Model of Voluntary Departure describes the departure from college where students choose to leave the institution. The reasoning for leaving may be the result of the student not seeking membership in the institution, in groups, or other bonds (formal and informal with the institutional environment (Berger & Braxton, 1998; Tinto, 1975). This theory is relevant for future examination in the lens of understanding how enrollment in an FYE course such as ACA 122 leads to connecting students and developing memberships within the institution and prevents departure; the FYE course is an avenue for the students to connect. Also, the uniform learning outcomes allow students to consistently learn about the institution's policies, procedures, and support offices (Jaijairam, 2016; Miller & Servaty-Seib, 2016). In short, the educational objective of the class is to develop a student's skills for adjusting to college and educate the student about institutional policies, procedures, services, and resources (Longwell-Grice & Longwell-Grice, 2008; Mayo, 2013; Seidman, 2005). Regardless of the objectives or learning outcomes of the class, if the student does not adjust academically to the institution, socially to the new environment, or emotionally to their challenges and surroundings, they are likely not to be retained (Wyatt & Bloemker, 2013).

Practice and instructional review have developed FYE courses such as ACA 122; a combination of retention theories are at the foundation of facilitating student success through connection with the institution, making students aware of campus resources, and assisting with adjusting to college (Jaijairam, 2016; Morris & Cutright, 2005; Upcraft et al., 1989). The increasing connection between faculty and students facilitates a learning environment conducive to student success to occur, especially in an FYE course (Seidman, 2005). As seen in Appendix B, these interactions are accompanied by learning outcomes to address learning strategies. The strategies reviewed in the course that aids future academic success are learning styles, academic

motivation, note-taking, reading, test-taking, and time management strategies. Regardless of the learning outcomes connected to facilitating student success, the assessment of the data provided by PCC and SCC in this study yielded that the hybrid modality did not statistically offer the same level of success as the face-to-face and online modalities.

Limitations

This study has multiple areas where assessment is limited. Instructor training/experience teaching in different modalities, variations in institutional online course software applications, variation and customization of course software to meet faculty and student needs, ability to indicate/measure accessibility resources and accommodations utilized by students, level of faculty-student interaction, independent instructor grading perspectives, and individual student ability and perception of the value of course completion are factors that can impact the results and provide a better understanding of the observed population. All of these factors were not measured due to a lack of reporting at the institutional level. The variability of the course, the institution, the faculty member, and the everchanging student expectations and abilities can impact the outcomes and were not part of the study. A greater understanding of those variables can lead to uniform analysis and understanding.

This study had additional limitations which should be considered—the limited number of instructors teaching the course, online, face-to-face, and hybrid modalities. These institutions have a limited number of faculty to ACA 122; the reduced number of instructors leads us to estimate or model the abilities of those instructors to that of the larger population (the other community colleges within North Carolina). Instructional expectations between instructors and institutions should also be taken into account and be considered for future assessment. Data points related to the instructor are vital in future research. Insight and knowing if the instructor is

comfortable teaching course material and meeting the learning outcomes could provide insight. Additionally, knowing the instructor's level of experience teaching face-to-face, online, and hybrid could provide a meaningful assessment. A final data point related to the instructor is knowing if the instructor had completed formal training regarding each of the modalities. Instructors who have training in teaching one modality may be better equipped to build the needed student connections, provide varying communication pathways, incorporate various learning styles into instruction, and achieve the learning outcomes of the course when compared to instructors who are not trained in a particular type of teaching, or how to incorporate the needed elements of student success, as seen in Anderson's Online Learning Model. Each modality can pose challenges for instruction, communication, and evaluation, and having this information could be helpful for future examination. This examination can offer insight to the instructors as well as the instruction of the course.

Furthermore, a better understanding of the students enrolled in ACA 122 can provide a better understanding of the modality's impact on student success. Pre-enrollment data related to the student can yield insight into modality and success. Knowing pre-enrollment data can provide additional comparisons with post-course data. Gaining additional awareness of students regarding their level of comfort in utilizing the different modalities, the preferred modality, the employment status (not working, part-time, or full-time), the amount of experience of taking courses in each modality, intended degree pursued, career goals, and anticipated attempted hours during the term can all provide additional insight better to understand the student and the impact on success. Additionally, understanding the student at the end of the course can yield further insight to support the student and provide continued direction to the institution offering the course and potential change of variables in the duration of the course. Information regarding

content mastery (final grade), knowing if the student changed their degree type during the semester, knowing if the student changed their career goal, knowing if the student experienced challenges with internet access, knowing how many hours the student initially attempted versus completed, and knowing if the student utilized institutional resources regarding accommodations will provide further insight. A better understanding of the student at the onset of the course and again at the completion of the course will better direct campuses' approach to supporting the student.

Additionally, the sample size of the students studied between 2014 and 2019 also impacted the results. Not knowing of students who changed their degree type while enrolled in ACA 122 was also a limitation. Students who changed their degrees while enrolled could have impacted the results of H_2. The study looked at degree completion, modality, and GPA, but it is unknown who changed majors up to degree completion. This study utilized two data sets from two community colleges in North Carolina; data sets from multiple colleges for varying sizes with student demographics can provide a deeper, more substantial look at the impact within the state community college system. However, generalizing the students to the point of measurable characteristics and course modality can lead to measuring the impact of modality.

Recommendations for Future Research

Research connected to the FYS course modality is needed based on the range of limitations of the data sets provided by these two NC community colleges. The primary reason for ACA 122's offering is to support the student's ability to adjust academically, socially, and emotionally to the higher educational setting and aid in degree completion (Harper & Quaye, 2009). Further studies should be conducted at a larger scale with the NC Community College System Office to assess and monitor all community colleges within the system. Improved data

collection, monitoring student success rates, and establishing a dashboard with drill-down capability to look at specific standard student demographics are desirable. Increased data storage of student characteristics aided in a better understanding of modality and will further contribute to increasing understanding. Increased guidance and expectations of community colleges within the state system also provided a baseline/foundation for uniform instruction of the course. Additionally, extracting this data at specific points in time within the academic year can lead to a system-wide point-in-time measurement of the outcome of the course and the modalities and offer a comparison among colleges. An example is at the close of the summer term, once degree conferral has been offered and reported to the system office. The ability to measure the faculty member's level of comfort or training for online instructions would also provide insight into the level of preparedness of the instructor. Training and recording the amount of prior instruction of a certain type of modality could guide institutions in anticipating challenges with modality, instructional technology, and meeting students learning outcomes.

The students enrolled in ACA 122 between 2014 and 2019 were the focus of this study; the COVID-19 pandemic occurred just after the end of the student data collection. Additional assessment of students enrolled in classes (which were primarily online) during the COVID-19 pandemic and again after institutions returned to face-to-face instruction will offer an increased understanding of the pandemic on student success and provide valuable information regarding student success since institutions have returned to multiple modalities on the community colleges' ACA 122 course.

This study provided statistical support for the need to look further at race/ethnicity in regard to student success. A better understanding of race/ethnicity and modality's impact on student success is worthy of further research. The next steps for institutional leaders to support

populations are a better insight into race/ethnicity on student needs, support, and accommodations. An understanding of need, ability, or cultural challenges is needed to continue understanding student success in regard to ACA in the NC community college system.

An additional recommendation is to examine the students who did not complete a degree at the institution. Assessing and understanding the reason for the student to separate from the institution. Look at the impact of students' needs, perceptions of academic challenges, and perceptions of resources and accommodations regarding instruction and support. Evaluate the student's ability (high school GPA) entering the institution. It would be advantageous also to gain a qualitative assessment of the student and modality. Institutions need to understand the student's departure and assess the impact of intervention strategies, whether it is the student's perspective, modality, or the instructor's training.

Furthermore, a qualitative study would provide an in-depth exploration of student experiences of the different modalities. Gaining non-numerical insight into perceptions of modality, perceived level of difficulty, challenges with learning in a modality, and suggestions of improvement through reflection can provide institutions with student feedback. This feedback can provide an in-depth understanding of the *why* as opposed to the *what* of quantitative research. Knowing how each modality impacts the student at a qualitative level can provide a thoughtful examination of the data and provide an interpretation of the challenges facing students in a particular modality. The qualitative assessment can direct institutions with opportunities to limit those student experiences in each modality.

The most significant question institutions should seek an answer to is why the hybrid modality did not yield the same level of success. In addition to a qualitative understanding, a better understanding of the student's demographics can aid in finding causation. Institutions

should also ask the students who were not successful in the hybrid modality for their insight on academic performance. Institutions could learn about challenges with managing different communication expectations, challenges with varying attendance/calendars, or managing varying assignment expectations. Understanding the limitations or challenges of the hybrid modality can provide direction to leadership regarding offerings, pieces of training for faculty, and student enrollment in modalities. An intentional understanding of the hybrid effect of courses on student success may lead to an increased understanding of the challenges students face when enrolling in this modality. The hybrid effect on student success and course outcomes can be beneficial for institutional leadership in developing training, instructional opportunities associated with learning styles, and future course or even program development. Institutional leadership may find the hybrid effect on courses may influence future program course offerings by speculating on the impact on the student and program outcomes. Institutions must look at the potential impact of course modality and student ability. A better understanding of the correlation between the two can aid future initiatives or metrics to monitor student outcomes.

Recommendations for Practice

Since this is a required course within the NC community college system, it will be worthwhile to continue to study the impact of this class and the modality of the course on students' success. Comparing these data sets with those during the pandemic and, again, post-pandemic could offer validity or portray a shift in the impact of modality. The continued examination of course modality is also needed based on the continuous improvements in classroom technology and student-facing learning systems. Uniform student data warehouses will allow for better assessment and understanding of this topic. Uniform reporting of demographics/data can assist research. Consistent reporting will allow research to examine other

demographics and better understand modality and student success. Student characteristics that were not able to be retrieved but could offer value include student age at the time of course completion, student age at the time of degree completion, student course load (total credit hours) at the time of completing ACA, employment status (unemployed, part-time, and full-time) at the time of course completion, number dependents, marital status, high school GPA, student preference of modality, if online classes had been completed previously, and if the student was first-generation. Many students at a two-year college are part-time, employed, have attended a non-residential campus, and are loosely involved with the campus and campus-based activities, but it is unknown if these same characteristics present in the data provided by SCC and PCC (Bers & Younger, 2014). These attributes are in addition to knowing if students are considered non-traditional, financially independent, commuting, and attending part-time, which is common among students enrolled at a two-year college (Wirt & Jaeger, 2014). Student assessment related to student-reported data concerning employment status, marital status, distance from campus, and first-generation status (as defined by the community college system office) can provide additional insight as the level of risk or the potential impact of modality on student success would be beneficial to support students and the mission of the institution. Additional information available at the institution and the system level can provide further assessment and insight on student risk related to enrollment status (new/continuous/returning after separation), Highschool GPA (weighted/unweighted), and academic accommodations/accessibility resources utilized. These data points need further attention to provide statistical evidence of the need to support or prioritize initiatives linked to retention and persistence.

Future studies will need to gain additional insight into those student characteristics to develop a more robust understanding of the student, their experiences, and expectations both

before enrolling in the course and their anticipated success (Miller & Servaty-Seib, 2016). Increasing data standards, assessment, and continuous evaluations of the impact of variables at the system and institutional level can provide insight into increasing the performance of students enrolled in ACA 122 and increase the impact of the course on student success. The increased knowledge of the impact and student enrollment (pre and post-course completion) can aid in student progression and degree attainment.

Conclusion

This dissertation initially aimed to provide statistical evidence of the impact of modality on student success. This study aimed to determine if the instructional modality of ACA 122 impacts the students' success. The study examined those students who completed ACA 122 and completed an AA, AS, AAS, AE, AFA, or AE degree or transferred to a senior institution prior to completing their degree. The two North Carolina community colleges utilized to analyze the data were Pitt Community College and Southwestern Community College. The study captured core data points to assess the connection between modality and student success by viewing the data of a community college in the eastern and western regions of NC. The study can allow for generalizations based on the enrolled student populations in those two regions and provide insight into other community colleges across the state. Understanding the academic impact on students enrolled in online, hybrid, and face-to-face instructional modalities is beneficial for course evaluation and redesign. It offers additional support to students enrolled in a statistically less successful modality. The quantitative, non-experimental research found that students enrolled in a hybrid instructional modality at these two institutions were less successful. Since the result of this study does not portray an impact on the success of online or face-to-face course modalities, a continued examination will contribute to a better understanding of a particular

modality's impact on student success. The students enrolled in a face-to-face or a completely online modality were not more or less successful. Based on the results of this study, community colleges that offer ACA 122 can better understand the face-to-face modality does not directly positively or negatively impact the student's success. This study identified the need for better, more inclusive data collection that can provide a better understanding of student perception, need, and impact regarding the modality of the NC community college ACA 122 course. FYE courses aid in the retention of students at institutions, and it is the combination of practices of retention theories engrained around the mission of the FYE course to expedite student success (Jaijairam, 2016; Ryan et al., 2016; Upcraft et al., 1989). In conclusion, community colleges can leverage cost-effective online instruction of ACA 122 and generalize that students are statistically successful compared to the face-to-face modality.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** ·
rede.ecu.edu/umcirb/

Not Human Subject Research Certification

From: Social/Behavioral IRB
To: Travis Bulluck
CC: David Siegel
Date: 7/13/2022
Re: UMCIRB 22-000946
Social/Behavioral IRB

On 7/13/22, the IRB Staff reviewed your proposed research and determined that it does not meet the federal definitions of research involving human participants, as applied by East Carolina University.

Therefore, it is with this determination that you may proceed with your research activity and no further action will be required. However, if you should want to modify your research activity, you must submit notification to the IRB before amending or altering this research activity to ensure that the proposed changes do not require additional UMCIRB review.

The UMCIRB appreciates your dedication to the ethical conduct of research. It is your responsibility to ensure that this research is being conducted in accordance with University policies and procedures, the ethical principles set forth in the Belmont Report, and the ethical standards of your profession. If you have questions or require additional information, please feel free to contact the UMCIRB office at 252-744-2914.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418
IRB00003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000418

APPENDIX B: ACA 122 SYLLABUS TEMPLATE

ACA 122
COLLEGE TRANSFER SUCCESS

COURSE DESCRIPTION:

Prerequisites: None
Corequisites: None

This course provides information and strategies necessary to develop clear academic goals beyond the community college experience. Topics include the Comprehensive Articulation Agreement, college culture, career exploration, gathering information on senior institutions, strategic planning, critical thinking, and communication skills for a successful academic transition. Upon completion, students should be able to develop an academic plan to transition successfully to senior institutions. Students who plan to start their careers upon graduation should be able to develop an academic plan to achieve their career goals. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.* Course Hours Per Week: Class, 0. Lab, 2.
Semester Hours Credit, 1.

LEARNING OUTCOMES:

Upon completion of this course, students will be able to:

1) Develop a strategic plan for completing community college academic goals, including certificates, diplomas, and/or associate degrees.
2) Develop a strategic plan for transferring to a university and preparing for a new career.
3) Identify the rights and responsibilities of transfer students under the Comprehensive Articulation Agreement (CAA), including Universal General Education Transfer Component (UGETC) designated courses, the Transfer Assured Admissions Policy (TAAP), the CAA appeals process, and university tuition surcharge.
4) Evaluate learning strategies, including notetaking, test-taking, information processing, time management, and memorization techniques, and identify strategies for improvement.
5) Identify essential college resources, including financial aid, advising, registration, tutoring, library services, computer labs, and counseling services, and recognize the importance of these resources on student success.
6) Identify essential college policies and procedures, including academic integrity, such as avoiding plagiarism, calculating a GPA, and maintaining satisfactory academic progress for financial aid eligibility and/or good academic standing.

OUTLINE OF INSTRUCTION:

A. Academic Planning
   1) Roles and responsibilities of advisees
   2) Certificates, diplomas, and degrees
   3) Plans of study, pre-majors, and study tracks
   4) Transfer and bilateral agreements
   5) Graduation requirements

B. Seamless Transfer to Senior Institutions and Careers
   1) Identifying personal values, interests, and skills
   2) Researching careers
   3) Researching senior institutions and program major requirements
   4) Connecting majors to careers
   5) Comprehensive Articulation Agreement
   6) Bilateral Articulation Agreement
   7) Financial aid planning

C. Goal setting
   1) Setting realistic, time-specific goals
   2) Setting short-term and long-term goals
   3) Following goals through to completion

D. Learning Strategies
   1) Learning Styles
   2) Academic Motivation
   3) Note-taking strategies
   4) College reading strategies
   5) Test-taking strategies
   6) Time management strategies

E. College culture
   1) Expectations of a college student
   2) Expectations of students at senior institutions
   3) Introduction to Sakai
   4) College policies and procedures, including attendance and withdrawal, advising and registration, and the Academic Honesty Policy
   5) Campus resources
   6) Extracurricular activities

REQUIRED TEXTBOOK AND MATERIALS:

Texts to be selected by instructor
Weekly planner

APPENDIX C: NC COMMUNITY COLLEGE DEGREE TYPES

Associate in Arts (AA) – The Associate in Arts degree shall be granted for a planned program of study consisting of a minimum of 60 semester hours of credit (SHC) of college transfer courses. Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic computer use.
The Comprehensive Articulation Agreement (CAA) and the Independent Comprehensive Articulation Agreement (ICAA) enable North Carolina community college graduates of two-year associate in arts programs who are admitted to constituent institutions of The University of North Carolina and to Signatory Institutions of North Carolina Independent Colleges and Universities to transfer with junior status.

Curriculum options are based on the 2020-21 catalog.

- AA - Business/Accounting Pathway Program
- AA - Communications Pathway Program
- AA - Music Pathway Program
- AA - Philosophy Pathway Program
- AA - Political Science Pathway Program
- AA Construction Management Pathway Program
- AA - Pre-Health Pathway Program
- AA - Psychology Pathway Program
- AA - Social Work Pathway Program
- AA - Sociology Pathway Program
- AA Construction Management Pathway Program
- AA - Creative Arts Pathway Program
- AA - Criminal Justice Pathway Program
- AA - English Pathway Program
- AA - Foreign Language Pathway Program
- AA - Health and Wellness Pathway Program
- AA - History Pathway Program
- AA - Information Systems Pathway Program
-

Associate in Engineering (AE) – The Associate in Engineering (AE) degree shall be granted for a planned program of study consisting of a minimum of 60 semester hours of credit (SHC) of courses. Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic computer use.

The degree plan includes required general education and prerequisite courses that are acceptable to all state-funded Bachelor of Engineering programs. Students who follow the degree progression plan will meet the entrance requirements at all of the North Carolina public Bachelor of Science Engineering programs. Associate in Engineering graduates may then apply to any of

these programs without taking additional and sometimes duplicative courses. Admission to Engineering programs is highly competitive, and admission is not guaranteed.

Total Semester Hours Credit (SHC) in Program: 60-61. One semester hour of credit may be included in a 61 SHC Associate in Engineering program of study. The transfer of this hour is not guaranteed.

Curriculum options are based on the 2022-23 catalog.

- AE - Chemical Engineering Pathway Program
- AE - Civil Engineering Pathway Program
- Associate in Engineering - General Pathway Program

Associate in Applied Science, General Occupational Technology (AAS) - The General Occupational Technology curriculum provides individuals with an opportunity to upgrade their skills and to earn an associate degree or diploma by taking courses suited to their occupational interests and/or needs.
The curriculum content will be individualized for students according to their occupational interests and needs. A program of study for each student will be selected from non-developmental level courses offered by the College.

Associate in Fine Arts (AFA) - The Associate in Fine Arts in Visual Arts degree shall be granted for a planned program of study consisting of a minimum of 60 semester hours of college transfer courses. Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic computer use.
Students must meet the receiving university's foreign language and/or health and physical education requirements, if applicable, prior to or after transfer to the senior institution.
Curriculum is based on the 2022-23 catalog.

- AFA - Graphic Design Pathway Program
- AFA - Studio Art Pathway Program

Associate in General Education (AGE) - The Associate in General Education curriculum is designed for the academic enrichment of students who wish to broaden their education, with emphasis on personal interest, growth and development. Coursework includes study in the areas of humanities and fine arts, social and behavioral sciences, natural sciences and mathematics, and English composition. Opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and the basic use of computers will be provided. Through these skills, students will have a sound base for lifelong learning. Graduates are prepared for advancements within their field of interest and become better qualified for a wide range of employment opportunities.

Associate in Science (AS) - The Associate in Science degree shall be granted for a planned program of study consisting of a minimum of 60 semester hours of credit (SHC) of college transfer courses. Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic computer use.

The Comprehensive Articulation Agreement (CAA) and the Independent Comprehensive Articulation Agreement (ICAA) enable North Carolina community college graduates of two-year associate in science programs who are admitted to constituent institutions of The University of North Carolina and to Signatory Institutions of North Carolina Independent Colleges and Universities to transfer with junior status.

Curriculum is based on the 2020-21 catalog.

- AS - General Pathway Program
- AS Architecture Pathway Program
- AS - Biology Pathway Program
- AS - Chemistry Pathway Program
- AS - Computer Science Pathway Program
- AS - Computer Science: Computer Systems Pathway Program
- AS - Computer Science: Information Systems Pathway Program
- AS - Environmental Science Pathway Program
- AS - Math Pathway Program
- AS - Physics Pathway Program
- AS - Pre-Dental Pathway Program
- AS - Pre-Engineering Pathway Program
- AS - Pre-Med Pathway Program
- AS - Pre-Pharmacy Pathway Program
- AS - Pre-Physical Therapy Pathway Program
- AS - Pre-Physician's Assistant Pathway Program
- AS - Pre-Veterinarian Pathway Program

https://abtech.edu/programs/academic/arts-sciencesuniversity-transfer