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The Relationship Between Academic Advising and Students' Completion of Corequisite Gateway Courses

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THE RELATIONSHIP BETWEEN ACADEMIC ADVISING AND STUDENTS' COMPLETION OF COREQUISITE GATEWAY COURSES

By

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(Under the Direction of Steven Tolman)

ABSTRACT

This bivariate correlational quantitative study sought to determine how variables predicted students' course outcomes in first-year English and mathematics courses within a corequisite learning support model. Course outcomes were defined dichotomously on a successful completion or unsuccessful completion basis. The participants of this study included those who initially attempted first-year English (n = 2,055) and mathematics (n = 2,843) course(s) in a corequisite learning support model for the first time between Fall 2018 and Spring 2022 and were assigned as advisees to the professional academic advisors in the centralized advising model. The examined predictors were students' frequency of sessions, length of time per session, and the first instance in which engagements occurred within the semester between students and professional academic advisors. The researcher deployed a series of binary logistic regressions. The frequency of meetings and the first instance when a student and academic advisor engaged in the semester were significant in students passing first-year corequisite English and mathematics gateway courses.

INDEX WORDS: Academic advising, Corequisite model, Gateway courses, English, Mathematics, Predictors, Learning support, Logistic regression

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DEDICATION

I dedicate this dissertation to my wife and daughter.

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CHAPTER 1

INTRODUCTION

Student retention, persistence, and degree attainment are immense challenges facing higher education leaders today. Daily pressures mount from legislators and system offices, emphasizing the need to improve these categorical areas (Khalil & Williamson, 2014). However, one variable that continuously combats the efforts to improve these categories is the vast number of students who are entering college underprepared. Despite earning a high school diploma, the Center for Community College Student Engagement (CCCSE, 2016) indicated that 68% of students enter college-level courses underprepared and must take learning support education. To better serve underprepared students and to improve first-year retention, the University System of Georgia (USG) urged institutions over the past decade to focus on increasing first-year student success in gateway courses. Therefore, East Georgia State College (EGSC) strategically implemented two strategies over a period of time to achieve the system office initiatives:

1) Modified the institution's academic advising model- In 2013 EGSC shifted from assigning all students to faculty academic advisors to assigning first-year students attempting to learn support coursework in first-year English and mathematics to professional academic advisors in a *centralized academic advising model*.
2) Restructured the institution's learning support model- In 2018, EGSC fully adopted the *corequisite learning support model* from the prerequisite learning support model. The prerequisite learning support model required students to attempt and pass an entry-level non-credit-bearing English or mathematics course before attempting a credit-bearing first-year English or mathematics gateway course. The corequisite learning support model allows students to attempt a credit-bearing first-year English and mathematics

gateway course with a support workshop to assist students who may need assistance (USG, 2020a).

When reviewing these strategies through an enrollment management lens, managers would expect increases in first-year students attempting corequisite gateway courses and those assigned to the centralized academic advising model. Complete College Georgia (CCG) (n.d.b) state that c*orequisite gateway courses* include an academic learning support section with an attempted first-year credit-bearing course such as English and mathematics. As these students achieve early successes and engage with professional academic advisors, retention of them is more likely, which then, in turn, should result in enrollment growth. EGSC has demonstrated robust new first-year student numbers each year. However, the retainment of these students has come short of enrollment goals each year. Since 2011, EGSC has been between eight and thirteen percentage points lower than the USG average in first-time, full-time student retention. Since 2016, enrollment has declined by thirteen percentage points (EGSC, 2022). It is important to note that the enrollment analysis did not include enrollment declines due to the COVID-19 pandemic.

Since implementing the corequisite learning support model, leaders agree that the method improves first-year student success, retention, and gateway course completion rates in English and mathematics (Denley, 2017). However, since the deployment of the centralized academic advising model to support first-year students attempting first-year learning support coursework in English and mathematics, there has been no empirical research conducted on the efficacy of the centralized academic advising model and how it tended to the core rudiments of students attempting learning support coursework and their academic successes related to retention—precisely when looking at students' engagements with professional academic advisors pertaining

to students' first-year corequisite gateway course successes. Therefore, this study aimed to identify predictor variables that contributed to the successful completion of first-year corequisite gateway course(s) when considering the nature of students' and professional academic advisors' engagements in the centralized advising model.

Background

This section describes the aptitude level of high school graduates entering college and the growing institutional academic support strategies that help to improve the success rates of first-year gateway courses at postsecondary education institutions. Higher education leaders have faced challenges related to high school students' college readiness for two-plus decades, such as low student retention and degree attainment. Ma and Cragg (2013) determined that one-third of students left college prematurely after their first year due to not completing first-year courses. Since this determination, it seems little has changed. Shapiro et al. (2017) noted only slight improvement in some areas despite this being a national priority among educational leaders for nearly a quarter century. On the contrary, ACT (2018b) noted that readiness levels in English and mathematics have steadily declined since 2014. Therefore, there remains a greater need for postsecondary institutions to be proactive in developing initiatives to support incoming students on campuses by shifting away from traditional modes of academic support and implementing more holistic approaches that meet students where they are.

In response to the need to improve student retention and degree attainment in the USG, educational leaders and scholars agreed that improving students' completion rates in first-year gateway courses was a plausible solution (Denley, 2017; Gardner Institute, 2017; Koch & Pistilli, 2015). *Gateway courses* are entry-level courses in a postsecondary curriculum in which students have unsuccessful outcomes (grades of D, F, Withdrawal [W], or Incomplete [I]) of

30% or higher and tend to impede their motivation, retention, academic progression, and degree attainment (Gardner Institution, 2017; Koch & Pistilli, 2015). Since gateway courses are a significant protagonist in students' academic futures, Bloemer et al. (2017) and Denley (2017) identified initial gateway courses as a prominent area to direct institution retention efforts.

The USG charged each USG institution to develop, modify, and implement strategies to curtail this trend and improve the completion of first-year English and mathematics gateway courses on its campuses. Khalil and Williamson (2014) noted that the USG placed an increasing emphasis on institutions to improve retention, progression, and graduation rates. In response, EGSC, in 2013, invested in a centralized academic advising model. A centralized academic advising model utilizes academic advisors to serve a specific student group of an institution (Chiteng Kot, 2014). In EGSC's case, the model consisted of full-time professional academic advisors to serve first-year students attempting first-year prerequisite learning support coursework in English and mathematics. The academic advisors were assigned to provide academic support for students attempting first-year prerequisite learning support coursework and assisting them in completing the course to ensure their persistence. Studies have shown that accumulating college-credit early catalyzes students into academic success (Lewis & Terry, 2016; Wang, 2017).

In 2018, the USG (2020b) implemented the Momentum Year initiative to improve first-year gateway course success rates. This initiative has since evolved into the Momentum Approach (CCG, n.d.a). The Momentum Year's core principles were consistent with those of Complete College America (CCA) (2012) and CCG (2018). The Momentum Year's tenets were to improve further first-year English and mathematics gateway courses in students' programs, provide students with purposes, and foster growth mindsets. The cornerstone of these tenets was

improving the completion of first-year English and mathematics gateway courses in students' academic programs during their crucial first year of college.

In response, EGSC, in 2018, restructured its learning support model. The institution adopted the corequisite learning support model and shifted from the prerequisite learning support model. EGSC continued the centralized academic advising strategy for those attempting first-year learning support coursework — viable strategies to increase student success (Chiteng Kot, 2014; College Board, 2009; Hanover Research, 2014; Tinto, 1999; 2016; 2017). A corequisite learning support model combines an academic learning support workshop with a credit-bearing first-year English or mathematics gateway course (Ran & Lin, 2019). The professional advisors responsible for students attempting first-year English and mathematics coursework in the corequisite learning support model were tasked with fostering student purpose, encouraging purposeful choices, and promoting productive academic mindsets. Students were directed with program maps to complete the first-year corequisite gateway courses and earn 30 credit hours at the end of the first year. These advisors also were tasked with assisting students in navigating the college environment and helping them overcome academic challenges. Implementing the corequisite learning support model and advising tactics aimed to increase the likelihood of first-year students' academic success, ultimately improving overall student retention and degree attainments.

After EGSC implemented the corequisite learning support model, a consensus was established among the USG community that the strategy effectively improved first-year gateway course completion rates in first-year English and mathematics gateway courses (Denley, 2017). The research at one USG institution revealed that the first-semester retention rate of students who attempted a corequisite learning support course was 73% compared to students who

attempted prerequisite learning support courses at 57% (Beaman-Hackle & Lanier, 2018). In a separate study, Ran and Lin (2019) observed that students assigned to the corequisite learning support model were 13 percentage points more likely to pass a first-year English gateway course and 15 percentage points more likely to pass a first-year mathematics gateway course in students' first year of enrollment compared to students assigned to prerequisite learning support model courses. The model showed a promising positive effect on increasing academic achievement in first-year English and mathematics gateway courses.

Regarding implementing the centralized advising model, a formal analysis has yet to be conducted to determine the effectiveness of the centralized academic advising model at EGSC. The most common research on academic advising is focused on student satisfaction with the advisement process rather than identifying predictors of student success (Campbell & Nutt, 2008). Focusing more on predictors would contribute to improved academic advising practices and whether those practices impacted student academic achievement experiences (Campbell & Nutt, 2008; Habley & McClanahan, 2004; Young-Jones et al., 2013). Montag et al. (2012) further deemed the need to consider academic advising practices as an area of improvement. Habley et al. (2012) concurred with Montag et al. (2012) and stated, "There is ample room for scholarly inquiry into the effectiveness and outcomes of academic advising efforts" (p. 291). He and Hutson (2016) also echoed this need as the research into academic advising is far from considered suitable and needs further pursuit. These researchers identified academic advising as a clear gateway for postsecondary institutions to begin to improve students' overall outcomes. However, it is equally important to note that most research on academic advising is not empirical and merely presents anecdotal or correlational information (McFarlane & Thomas, 2016; McGill & Nutt, 2016). This gap in research has encouraged scholars to research student success more

efficiently among the interpersonal connections between students and academic advisors (Strayhorn, 2015). Tinto (2017) went further to say that it is time for higher education administrators to evaluate persistence or students' academic success through the students' experiences and engagements with the campus community more intently.

Therefore, this study aimed to identify predictor variables that contributed to the successful completion of first-year corequisite gateway course(s) when considering the nature of students' and professional academic advisors' engagements in the centralized advising model. By proxy, this study will shed light on improving the state college's retention of first-time first-year students. To best understand the benefit of students engaging with professional academic advisors, this study looked to answer to what extent the frequency of sessions, the length of time per session, and the first instance in which engagements occur within the semester between students and professional academic advisors predict the students' course outcomes (successful; unsuccessful) in first-year corequisite gateway courses.

Statement of Problem

More and more high school graduates are entering college academically underprepared and are unsuccessful in first-year gateway courses. The failure to complete first-year gateway courses has led to an early halt in many students' postsecondary academic progression. Educational leaders have identified that there should be a focus on improving students' performance in first-year gateway courses. Thus, a paradigm shift has occurred, and many postsecondary institutions are adopting the corequisite learning support model and academic advising strategies that focus on specific populations of students. The corequisite learning support and centralized advising models have become more viable in helping students experience early academic achievement, resulting in a greater likelihood of increasing retention and degree

attainment. According to the literature, the corequisite learning support model improved first-year students' course completions and retention rates. Centralized academic advising yields similar results among those students who engage with academic advising as they are more likely to experience early academic success.

Educational leaders at EGSC implemented a corequisite learning support model for first-year English and mathematics gateway courses. They utilized professional academic advisors to support students' academic achievement in those first-year corequisite gateway courses. However, since establishing the centralized advisement strategy, there has not been an empirical study to evaluate how the centralized academic advising model impacted students' academic success in first-year corequisite gateway courses.

Purpose Statement

The study aimed to identify predictor variables that contributed to the successful completion of first-year corequisite gateway course(s) when considering the nature of students' and professional academic advisors' engagements in the centralized advising model. More specifically, the predictor variables selected for examination were the frequency of sessions, the length of time per session, and the first instance in which engagements occurred within the semester between students and professional academic advisors. By examining these variables, the study partially satisfied the need to observe the tendencies of student performance in completing first-year corequisite gateway courses. Furthermore, it created an opportunity for EGSC to become more aware of the successes and shortcomings of the centralized academic advising model.

Lastly, the study also intended to add to the literature on higher education's academic support services and inform educational leaders of strategies to help increase students' success in

first-year corequisite gateway courses. Moreover, this study intended to fill the literature gap by examining the relationship between academic advising and students' contextual academic advising domains and their grade outcomes. Overall, there was an anticipation in conducting this study to determine predictors of students' academic achievements in first-year corequisite gateway courses related to engaging with academic advising.

Research Question

The overarching research question of this bivariate correlational quantitative study was: To what extent do the frequency of sessions, the length of time per session, and the first instance in which engagements occur within the semester between students and professional academic advisors predict students' course outcomes (successful; unsuccessful) in first-year corequisite gateway courses?

Significance of the Study

Literature related to student engagement with academic advisors suggested that students have more successful course outcomes and higher success rates in a course if they engaged with an academic advisor versus those students who did not. In addition, if students and academic advisors engaged candidly and had meaningful dialogue during sessions, it increased the likelihood for students to have positive outcomes. These outcomes often manifested as student empowerment, increased campus involvement, and positive student development. Each, in turn, ultimately strengthened student retention and progressed them toward graduation.

The researcher expected that this study would unveil similar findings. Even if the outcomes were not similar, the researcher would still share the findings with EGSC and similar institutions. It would be both ethical and advantageous for the progression of higher education and the upcoming generation of students to share the results. In addition, the research needs to be

shared because each institution would be better informed in achieving their pursuit of creating the best academic advising model for their student body. The result may influence institutions to deploy the advising model to the entire student body or launch advising initiatives incorporating professional academic advisors into other campus operations. Some potential areas of consideration are, but are not limited to, in the classroom, residential campus living, the Office of Student Conduct, and the Office of Admissions. Deploying in these areas enables students to be exposed to professional academic advisors as a campus resource, creating more opportunities and positively impacting areas of enrollment. However, the results could lead an institution in a different direction. Institutions may adopt a different academic advising model for their student body, such as the faculty or blended academic advising model.

Lastly, the researcher would share this research to suggest that institutions consider improving upon the internal assessment process that contributes to the continuation of regional accreditation and strengthens their assessment processes to ensure adequate and effective academic advising amenities are provided to the student body. In addition, moving beyond and improving assessment in this area will only provide the institution with concrete evidence to continue, modify, or abandon academic advising models in place designed to positively affect students' course outcomes in first-year corequisite gateway course(s).

Procedures

This study sought to determine predictors of students' academic success in first-year corequisite gateway courses. Specifically, this study examined predictor variables within the engagements between professional academic advisors and students attempting first-year corequisite gateway courses. This study used a quantitative research design to observe relationships between variables and relied on de-identified archival data. The researcher

deployed a series of logistic regressions to observe the relationships of each predictor variable. According to Creswell and Creswell (2018) and Osborne (2014), it is best to use a logistic regression design framework to examine the development of ideas and trends. The dependent variable was the dichotomous course outcome, i.e., successful/unsuccessful. The independent variables were the frequency of sessions, the length of time per session, and the first instance in which engagements occurred within the semester between students and professional academic advisors.

The researcher conducted the study at EGSC. The institution is located in mid-east Georgia and is governed by the USG. The population consisted of all students enrolled in first-year corequisite gateway courses for the first time and assigned to professional academic advisors in the centralized advising model. The students who attempted the first-year gateway course ENGL 1101 in a corequisite learning support model for the first time between the Fall 2018 and Spring 2022 semesters were 2,055. The students who initially attempted first-year gateway courses MATH 1001, MATH 1101, or MATH 1111 in a corequisite learning support model for the first time between the Fall 2018 and Spring 2022 semesters were 2,843.

For this study, the researcher received approval from the Institutional Review Board (IRB) and a letter of cooperation from the Office of Strategic Planning and Institutional Research at EGSC. Furthermore, Georgia Southern University's (GSU) IRB was approved. After obtaining approval, the Office of Strategic Planning and Institutional Research extracted de-identified archival data from the education management databases, Ellucian Banner 9 INB, and Educational Advisory Board (EAB) GradesFirst. The office then provided the dataset to the researcher in a Microsoft Excel spreadsheet. The Microsoft Excel spreadsheet was saved in an encrypted file and stored on a password-protected computer. The researcher modified the dataset

using Microsoft Excel—the modification aimed to identify cases where students did not meet the study's qualifications and collapsed data into categories. The researcher recorded students who had multiple attempts of the same first-year corequisite gateway course and removed the second attempt from the dataset while preserving the first attempt. Additionally, the researcher removed individuals not assigned to a professional academic advisor in the centralized advising model from the dataset, even if they attempted a corequisite gateway course. Lastly, the researcher imported the data into the Statistical Package for the Social Sciences (SPSS) for statistical analysis.

Definition of Key Terms

The following key terms are identified for the research:

Academic Advisors – Academic advisors are individuals responsible for sharing knowledge of major and degree requirements, helping students schedule current and future courses, facilitating students' academic progression, and helping students navigate an academic institution's academic rules and regulations (Baker & Griffin, 2010).

Centralized Academic Advisement Model – Centralized advisement is an academic advising model where academic advisors are tasked with serving a specific student group of an institution (Chiteng Kot, 2014).

Corequisite Gateway Courses – Corequisite gateway courses combine an academic learning support section with an attempted first-year, credit-bearing course such as English and mathematics (CCA, 2021a).

Corequisite Learning Support Model – A corequisite learning support model is a form of learning support designed to assist students who may need assistance in entry-level collegiate courses such as English and mathematics (USG, 2020a)

Gateway Courses – Gateway courses are entry-level courses in a postsecondary curriculum that have unsuccessful outcomes (grades of D, F, Withdrawal [W], or Incomplete [I]) of 30% or higher, and tend to impede students' motivation, retention, academic progression, and degree attainment (Gardner Institution, 2017; Koch & Pistilli, 2015).

Chapter Summary

As more and more students enter college underprepared, higher education leaders face pressure to improve student retention, persistence, and degree attainment. An area identified by educational leaders to address these challenges is focusing efforts on improving first-year students' successful completion rates in first-year gateway courses. Gateway courses are entry-level courses in a postsecondary curriculum with unsuccessful outcomes of 30% or higher and impede students' motivation, retention, academic progression, and degree attainment. Two strategies implemented by educational leaders to improve successful completion rates in first-year gateway courses are the corequisite learning support model and investing in professional academic advisors to focus on a specific student type solely. The literature noted that using the corequisite learning support model contributes to increased course success rates and retention of first-year students attempting first-year English and mathematics gateway courses. Literature on students' engagements with academic advisors suggests that attending meetings with academic advisors leads to more successful course outcomes, higher success rates in specific courses, and improved retention compared to students who do not attend such meetings. Furthermore, student engagements with academic advisors seemed to be associated with positive student academic outcomes, specifically in the first semester and the first year of a student's academic lifespan.

Educational leaders at EGSC implemented these strategies over several years. However, since establishing the centralized advising strategy, there has yet to be an empirical study to

evaluate how the academic advising model may have contributed to the success of first-year students who attempted first-year corequisite gateway courses. The research used data points from student archival data. It utilized bivariate correlational statistical tests that included a series of binary logistic regressions to analyze the student population. The population consisted of students who attempted a first-year corequisite English gateway course and a first-year corequisite mathematics gateway course for the first time and were assigned as advisees to professional academic advisors. The statistical analysis examined whether the frequency of sessions, length, and the timing of initial engagements within the semester between students and professional academic advisors predicted the students' final course grades in first-year corequisite gateway courses. Not only did this research address the improvement of students' successes in first-year gateway courses, but it also helped add to the literature that guides the area of higher education's academic support services. Furthermore, the study informed educational leaders of the best strategies to increase students' success in first-year corequisite gateway courses and improve retention rates of first-time first-year students pertaining to the use of academic advising.

CHAPTER 2

LITERATURE REVIEW

There has been extensive research conducted on the trends of underprepared students entering high school (ACT Research and Policy, 2013; ACT, 2018a, 2018b; Atuahene & Russell, 2016; Chen et al., 2016; Gaertner et al., 2014; Habley et al., 2012; Ma & Cragg, 2013; Synder et al., 2016), and how under preparedness correlates to students being unsuccessful in first-year gateway courses. Additional research has demonstrated the importance of passing first-year gateway courses (Gardner Institute, 2017; Koch, 2017; Lewis & Terry, 2016) and the need for developmental education "learning support" to be implemented in first-year courses (CCCSE, 2016; Chan, 2016; Gebaurer, 2019; Kirst & Venezia, 2017; Perin, 2018). Since the implementation of learning support, researchers have collected data on the positive influence of the corequisite learning support model to improve students' success in first-year gateway courses (Adams, 2009; Beaman-Hackle & Lanier, 2018; Cho et al., 2012; Dadgar, 2012; Denley 2016, 2017; Jenkins et al., 2010; Logue et al., 2016; Martorell & McFarlin, 2011; Ran & Lin, 2019; Xu, 2016). However, the corequisite learning support model has not played the sole role in students' success in their first year. The literature exemplifies the role academic advisors play in higher education (Baker & Griffin, 2010; Iatrellis et al., 2017; Karr-Lilienthal et al., 2013; Nel, 2014; Smith & Allen, 2014; Soria et al., 2017) as being an intricate instrument in students being successful in their first year of college. Literature supports that when students actively engage with academic advising, they experience more positive outcomes in their first year (Bahr, 2008; Boatman, 2012; Chan, 2016; Chiteng Kot, 2014; CCCSE, 2018; Denley, 2017; Logue et al., 2016; Logue et al., 2019; Ran & Lin, 2019; Ryan, 2013; Vander Schee, 2007; Williamson et al., 2014). Examining literature informed this research of how the strategies adopted by EGSC have

performed and contributed to the academic success of students attempting first-year gateway courses elsewhere, as well as informed this research of the theoretical framework used to guide this study.

A literature review establishes the background for the variables under study, highlighting the similarities and differences between the present study and previous research conducted in the field (Roberts, 2010). This review of the literature is not a comprehensive examination of all student success predictors related to students' engagement with academic advisors; however, the researcher has designed it to provide an overview of predictors related to students' academic successes in first-year corequisite gateway courses, explicitly focusing on the data analyzed in this study. Furthermore, this literature provides a summary of the aptitude at which students are entering college, gateway courses, the implementation of the corequisite learning support model in the USG, the role of academic advising in higher education, students' engagements with academic advisors, the theoretical framework related to student engagement, and student academic success predictors related to students' engagements with academic advisors.

In compiling this literature review, the researcher included relevant peer-reviewed articles, scholarly texts, dissertations, and national education reports that focus on the subject area related to this study. Peer-reviewed articles and other texts were dated within the past ten years unless considered foundational to the reviewed topic. Most peer-reviewed articles were collected from GSU's online electronic database systems. Other databases, such as Google Scholar, were also used to gather a level of sources that might have been relevant to this study.

This chapter organizes the content to provide an overview of predictors of students' academic successes related to their engagements with academic advisors. The literature review begins by providing the reader with overviews of the aptitude in which many students are

entering college and the implementation of learning support models to provide a context of students' needs for more comprehensive academic support strategies to improve academic success. Next, the researcher discusses the theoretical framework of this study. To conclude, the researcher examined each predictor in this study concerning students' engagements with academic advisors and their academic successes in first-year corequisite gateway course(s).

Review of the Literature

Since 2014, higher percentages of high school graduates are entering college academically underprepared, leading to many students not being successful in first-year gateway courses, a known barrier to student persistence, retention, and degree attainment (ACT, 2018b; Wyatt et al., 2014). Ma and Cragg (2013) determined that one-third of students departed from college prematurely after their first year due to not completing first-year gateway courses—entry-level courses in a postsecondary curriculum in which students have unsuccessful outcomes of 30% or higher and tend to impede their motivation, retention, academic progression, and degree attainment (Gardner, 2017; Koch & Pistilli, 2015). Low completion rates in first-year gateway courses are a predictor of student attrition (Bloemer et al., 2017; Denley, 2017). Therefore, most of the postsecondary education community agreed that a viable area to focus institutional resources is providing more robust academic support services to assist first-year college students through first-year gateway courses (CCA, 2012; CCG, n.d.a; USG, 2020b).

College Readiness

Often, the public eye views college readiness as earning a high school diploma and meeting minimum college admissions requirements. However, meeting said requirements does not accurately indicate whether students are college-ready out of high school (Chait & Venezia, 2009; Porter & Polikoff, 2012). Many teachers in secondary schools must rely primarily on their

personal and professional experiences to understand what college readiness entails and work to bring students to this standard. Secondary education's rigor and instructional effectiveness are minimal at the necessary levels (Duncheon & Muñoz, 2019). Early research noted the importance of exposing students to a higher academic rigor of high schools' core subjects, such as English, writing, and mathematics, to bring students to an aptitude for college performance (Gaertner et al., 2014; Perin, 2013; Wyatt et al., 2011). In recent years, Hembrough and Jordan (2020) reminded the educational community that the rigor of curricula and instructional effectiveness in high school is crucial to the overall success of students in acquiring the skills necessary for collegiate-level success. A few studies have observed a positive correlation between higher rigor of curricula in high school and college-level success. Gaertner et al. (2014) observed that completing an advanced Algebra II or higher mathematics in high school positively correlates with and is a proxy for student college success. Additionally, Zhang (2022) determined that math and English preparedness were significantly related to students' likelihood of degree obtainment.

There is a continuous need to monitor and expose high school students to English and mathematics at the proper cohesive rigor levels so that they may be ready and able to complete first-year gateway courses successfully. If not, there may be the risk of many more incoming first-year college students entering college with low aptitudes, plausibly failing in their first academic year (Wyatt et al., 2011; Wyatt et al., 2014).

Students Entering College Underprepared

The ACT Research and Policy (2013) collected student ACT scores and results to determine that nearly 80% of high school graduates aspired to pursue a baccalaureate-level degree. In addition, researchers noted that the students had insufficient reading and math levels

for first-year credit-bearing college courses. Specifically, 33% of the students underperformed in English, and 54% underperformed in mathematics. In 2019, low percentages of college readiness continued. ACT (2019) assessed that 37% of graduating high school students who took the ACT demonstrated college readiness by meeting at least three of the four ACT College Readiness Benchmarks; this percentage was a point drop from the previous year. In addition, 36% of graduating students met zero of the ACT College Readiness Benchmarks (ACT, 2019). These statistics are consistent with the National Center for Education Statistics findings, which noted that only 38% of twelfth-grade students demonstrated academic levels consistent with being college-ready (Snyder et al., 2016). Jimenez et al. (2016) observed that between 40% and 60% of first-year college students required a form of remediation in English, mathematics, or both. Since 2014, readiness levels in English and mathematics have steadily declined (ACT, 2018b).

The CCCSE (2016) reported that 86% of graduating students strongly agree (n = 54,292) that they are prepared academically for college. However, 68% of these students took at least one college developmental education course entering college. In an analysis in the same year, Chan (2016) reported that 68% of students who started a two-year public institution and 40% who started in a four-year public institution took at least one developmental education course in their first year; English and mathematics developmental courses were the subject areas for a greater need for developmental education among students. Furthermore, Atuahene et al. (2016) and Chen et al. (2016) observed that most high school students need more preparation for college mathematics than English. However, the need for remediation continues to increase for each subject area. There are several reasons why the need for remediation is increasing. Gebauer (2019) stated a widely accepted reason among scholars that "many of these underprepared students are transitioning to college after completing a K-12 experience with limited resources,

poor academic rigor, and a culture that does not promote interactions with teachers and lacks self-reflection and assessment" (p. 1). Because of the disconnect with college readiness, postsecondary schools continue to work to improve college readiness agendas on behalf of secondary education and implement college readiness reform (Kirst & Venezia, 2017). However, there is a need to understand today's students. Braxton et al. (2013) noted that twenty-first-century learners require twenty-first-century learning strategies to bridge the academic gap between secondary and postsecondary education so students can successfully navigate first-year coursework. Therefore, postsecondary institutions are shifting away from traditional models of academic support to a more holistic approach to achieving academic excellence.

Gateway Courses

Gateway courses are entry-level courses in a postsecondary curriculum in which students have unsuccessful outcomes (grades of D, F, Withdrawal [W], or Incomplete [I]) of 30% or higher, which can impede their motivation and degree attainment (Gardner Institution, 2017; Koch & Pistilli, 2015). These courses provide students with the basic subject knowledge to understand more advanced interwoven concepts within a degree program (Koch, 2017). The Gardner Institute (2017) further identifies gateway courses as "gatekeepers" to students continuing their education and reaching degree completion. These courses tend to have high enrollment, are frequently offered in the first year of a student's academic life, and are considered high-risk because of the more significant implications of either successful or unsuccessful outcomes. Students who fail gateway courses are more at risk for college attrition, leaving many students with their dreams extinguished and sometimes with student debt (Lewis & Terry, 2016). Similarly, Bloemer et al. (2017) also found a direct correlation between student attrition and unsuccessful attempts (grades of D, F, and W) in gateway courses. Conversely, in

their study, Lewis and Terry (2016) observed a strong correlation between the successful completion of these courses and degree attainment.

Gateway courses are a high-profile concept that higher education leaders focus on, and they are implementing several strategies to improve gateway course success (Gardner Institute, 2017). One strategy, in particular, is observing the patterns of student types attempting gateway courses and when, in academic life, a student type is taking a gateway course (Bloemer et al., 2017). In reviewing patterns, education leaders identified various predictors contributing to students' unsuccessful attempts at first-year gateway courses. Bloemer et al. (2017) reviewed student types and the point at which a gateway course is taken in a student's academic life to predict success in gateway courses. The researchers deployed a binary logistic regression. Bloemer et al. (2017) stated that the point in a student's academic life at which they attempt a course predicts their failure or success in the gateway course. Keeping first-year student types out of particular gateway courses until the second year was an obvious conclusion and an easy step toward higher retention (Bloemer et al., 2017). It is important to note that the specific names of gateway courses were not identified in the study but only by DFI rates. The researchers further suggested that institutions must be more observant and thoughtful in examining student types and at what point in their degree paths they are attempting gateway courses (Bloemer et al., 2017). That is to ensure that certain student types are not attempting gateway courses that may not be appropriate to the student type nor are known to be particularly difficult for the student type at their current stage of academic life. The review would ultimately require considering curriculum design and a shift from the traditional liberal arts degree maps.

Implementing the corequisite model is a more prominent strategy popular among higher education and has mounted with evidence to improve gateway course success rates. CCA has

done extensive work on supporting student success in college first-year gateway courses (CCA, 2012; Vandal, 2014) and noted the alarming low success rates of gateway courses among higher education institutions and the need for postsecondary institutions to reevaluate the standards by which students are eligible for first-year gateway courses (CCA, 2012; Vandal, 2014). CCA strongly advocates placing all students into first-year gateway credit-bearing college-level courses and receiving additional academic support (CCA, 2012; Vandal, 2014). CCA has demonstrated through its academic models that providing students attempting first-year credit-bearing gateway courses with academic backing is three to four times more likely to experience greater success in the first-year credit-bearing gateway courses (CCA, 2012; Vandal, 2014). As a result, CCA sparked a movement in how postsecondary education systems are redesigning how they approach students attempting first-year gateway courses and their models of learning support (Vandal, 2014).

Learning Support in the University System of Georgia (USG)

Higher education leaders have used the term *developmental education* for decades to describe how an institution provides students entering college with the opportunity to receive academic support early on in their programs of study to prepare them for the rigors of college-level courses (Perin, 2018). In the USG, *learning support* is the term used to refer to developmental education. According to the Academic & Student Affairs Handbook in the USG (n.d.b), “Learning Support is a generic term for programs designed to assist students who may need assistance to succeed in entry-level collegiate courses in English (reading and writing) and mathematics” (para. 1).

Before the exclusive use of the corequisite learning support model, the USG utilized a prerequisite learning support education model. The prerequisite model requires students to pass

an entry-level non-credit-bearing course before enrolling in a first-year credit-bearing gateway course (Ran & Lin, 2019). The model reflected low overall success rates of students in first-year courses despite improving students' aptitude for a college academic level. According to the CCA (2012), only 21% of students enrolled at a USG institution, which began in the prerequisite learning support model, passed first-year English and mathematics gateway courses. More specifically, at two-year institutions in the USG, 37% of students began in prerequisite learning support courses, and of these, 17% completed first-year gateway courses within two years. Therefore, educational scholars questioned whether the prerequisite learning support model approach is practical as students who attempted prerequisite learning support courses showed to have outcomes not better than students who began in credit-bearing college-level coursework their first year without a prerequisite learning support course (Dadgar, 2012; Martorell & McFarlin, 2011; Xu, 2016).

Corequisite Learning Support Implementation

Because so many students failed to make it to and through first-year college-level courses, resulting in a low success rate in first-year English and mathematics gateway courses, the USG implemented the corequisite learning support model. Implementing the new learning support education model is one of the primary strategies that higher education leaders have implemented to help bridge the gap between K-12 learning outcomes and higher education's academic rigor and better assist students entering college. Unlike the prerequisite learning support model, the corequisite learning support model allows students to enroll in a learning support course that supplements content while enrolling in a first-year credit-bearing gateway course.

Previous studies showed considerable improvements in success rates of first-year gateway courses and student persistence into the following academic year when using the corequisite learning support model (Cho et al., 2012; Jenkins et al., 2010). Adams et al. (2009) found that 63% of students who enrolled in a corequisite English course successfully passed a first-year English gateway course compared to a 39% success rate of students who attempted a first-year English gateway course after completing a sequence prerequisite course. Logue et al. (2016) determined that enrolled students in a first-year college-level mathematics course with weekly workshops enhanced students' performances, increasing academic progression. Specifically, of the 7,675 students assessed in Fall 2012 by the City University of New York (CUNY), 4,298 students completed a first-year college-level mathematics course on time with the corequisite learning support model compared to 1,919 students who began in a prerequisite learning support model remedial course. Before the full adoption of the corequisite learning support model by the USG, Beaman-Hackle and Lanier (2018) determined that the first-semester retention rate of students who attempted a corequisite learning support course was 73% compared to students who attempted prerequisite learning support courses at 57% at Middle Georgia State University, a USG institution.

Expansion of Learning Support Model. The CCA (2021a), CCG (n.d.b), USG (2020a, 2020b), and Denley (2016, 2017) have continued to publish research showing the efficacy of the corequisite learning support model and its improved success rates in first-year gateway courses. The USG is one of the pioneers and original members of the CCA Alliance of States who have published the effectiveness of the corequisite support implementation (CCA, 2021a, 2021b). Since implementing the corequisite learning support model, the USG has seen overwhelming increases in students completing math gateway courses and a significant increase in students

completing English gateway courses (CCA, 2021a). Beginning in the Fall of 2018, all USG institutions adopted the corequisite learning support model as the only form of learning support in the USG (CCG, n.d.b; USG, 2020a, 2020b). Within the same year, Rutschow and Mayer (2018) noted that nearly 35% of public two-year colleges offer corequisite learning support in first-year English and 16% in first-year mathematics gateway courses.

Between 2010 and 2023, there has been a recognizable movement where several state postsecondary education systems adopted the learning support model. The initial alliance was the state of Indiana and six others, including Georgia (CCA, 2021b). Now, 33 states have adopted the corequisite learning support model (CCA, 2021b). Recently, South Carolina adopted the corequisite learning support model (CCA, 2021b). While gaining popularity among several other states, the CCA, CCG, and USG continue to widely discuss the corequisite learning support model as having facilitated success in first-year gateway courses and the potential improvement of long-term academic outcomes (CCA, 2021a; CCG, 2018; Denley, 2016, 2017; Education Commission of the States, 2018; USG, 2020a, 2020b).

Academic Advising in Higher Education

Success in first-year gateway courses for students is focused on more than just a single academic learning support model but also the complementary role of student affairs and academic affairs initiatives. Tinto (1975) defined the pathway of achieving student success as having collaborative and sufficient interactions between a college's social systems with goals to meet students' needs to advance the student better holistically. However, nothing is more important than student involvement within the classroom and academic support services on campus, such as academic advising (Tinto & Pusser, 2006). Student involvement is vital for students in the first year of college who may be combating major academic decisions related to

the program of study, environment transitions, academic difficulties, and more. Each obstacle a student approaches tends to undermine student motivation, increase the likelihood of departure, and for those who may continue, resulting in an increased time to degree completion (Fox & Martin, 2017). Once enrolled at an institution, it is the responsibility of that institution to assist the student in remaining engaged and progressing toward graduation (Darling, 2015). To meet this need, many colleges are restructuring academic advising on their campuses to the evolving student populations of today. Anderson et al. (2014) noted that the evolution of the student population remains an ongoing challenge and is affecting the efficiency of academic advising for programs of study and keeping up with the demands to keep students engaged and progressing toward graduation.

Students' experiences and demographics have rapidly changed in higher education and do not resemble those of the past (Fox & Martin, 2017; Western Interstate Commission for Higher Education, 2013). Higher education now encompasses not only the traditional college students of typical age prepared for the academic challenges but also uniquely skilled adults, military veterans, international students, dual-enrolled individuals, those with varying levels of preparation, disabilities, and those who have experienced social and psychological transitions. Furthermore, students' challenges often change today because of the diverse incoming backgrounds and circumstances (Archambault, 2016). Therefore, the need for academic advising has established a demand that requires adaptation to the characteristics of the new generational student (Fox & Martin, 2017). It is also essential to note that the advisor's role has evolved from simply receiving a course catalog and meeting students to developing course schedules, as was the case in the early years of academic advising practices. Advisors must now demonstrate the ability to assist students with a wide range of skills and knowledge, along with discerning student

values, goals, interests, support systems, and experiences (Cuseo, 2016). There is a greater need for proactive approaches to connect students to the institution, support students' development, and create belongingness to improve students' likelihood of college persistence (O'Keeffe, 2013). These proactive methods include but are not limited to more interactions between students and advisors, inspiring involvement in campus co-curricular activities, and developing goals, motivation, and focus between advisor and student (Martin et al., 2014).

Academic advising and learning support models can increase college students' success, academic achievement, retention, and graduation rates (Hanover Research, 2014). The CCA (2016), a prominent advocate of the corequisite learning support model, noted that academic advising is central to students' academic success and must be active on college campuses; other academic support systems break down without academic advising. Other researchers go further to describe academic advising as an academic service that is unique in how it allows for more personal interaction opportunities with student and academic affairs representatives; because of this nature, academic advising influences student retention by affecting social interactions, student loyalty to the institution, and satisfaction (Smith & Allen, 2014). Educational leaders recognize that academic advising is widely used as a support system for navigating a college's academic and social environments to increase student success (Iatrellis et al., 2017). When surveyed about academic advisors' roles, students and faculty at the national level determined that academic advising is the most important student service institutions can offer the student body; additionally, 68% of students and 90% of faculty agreed that academic advising is critical (CCCSE; 2018). According to Noel-Levitz (2014), students consider academic advising a primary importance to their success. Furthermore, several studies indicate that academic advisors

view their roles as valuable and beneficial for students' success (Karr-Lilienthal et al., 2013; Nel, 2014; Soria et al., 2017).

Academic advisors' evolving role is now more hands-on to help students navigate academic failures and challenges that may lead to a phobia of taking academic risks. When a student fails, it may sometimes seem that avoiding rigorous academic work may be the best strategy rather than receiving a failing grade after putting in the effort. When this reclusively occurs, Gebauer (2019) noted that some students, even though they have been admitted to their college or university, grapple with questioning their sense of belonging and harboring doubts about their ability to thrive in a college setting. For these students to succeed, they must confront not only their academic unpreparedness but also the self-doubt and feelings of helplessness it engenders.

Baker and Griffin (2010) described an academic advisor's role as an individual who is dedicated, responsible, and expected to help students understand the rules and regulations of the college community, provide academic guidance on major and degree requirements, and facilitate the student towards earning a degree. Baker et al. (2010) state,

> High-quality advisors ensure students have the information they need to make good choices. Clear guidance that highlights the implications of a student's choices can fundamentally alter her or his process. A reliable source of accurate information on how to fulfill degree and general education requirements and an individual to engage with in academic planning is a valuable asset, especially as students strive to save valuable tuition dollars and complete college as efficiently as possible (p. 4).

A well-rounded academic advisor communicates and engages with all students despite their willingness. They view each moment of the advising process as valuable and ensure that students

are fully aware of how to meet educational goals/requirements, career goals, and future goals. Advisors further identify those enriched opportunities for the student to overcome, develop, and spark questioning of assumptions through critical thinking and consideration of innovative ways to solve problems (Baker et al., 2010; Barbuto et al., 2011).

Academic advising allows students to become members of their college community, develop critical thinking, learn their roles and responsibilities, and become a member of the global community. According to He and Hutson (2016), academic advising is a primary factor that directly impacts student development in higher education and is the most critical aspect of student retention from semester to semester. In continuance, Lowenstein (2015) previously described the impact of students' engagements with academic advisors when regularly attended, semester after semester, as:

> A student's academic adviser is just the person who can remain with the student over a period of more than a semester and work with the student on the intentional development of an integrated overview of the student's entire education. Why the adviser is better situated for this task than course instructors may be obvious but is worth discussing. One reason is that the adviser has regularly scheduled "teachable moments" with the student at course selection/registration time. Meetings arranged for this purpose are also excellent opportunities to look at relationships among current classes, previous classes, and potential future classes (p. 122-123).

Crocker et al. (2014) support this statement as they determined that the best advising strategy is building long-lasting relationships with students so that an academic advisor may have opportunities to guide students purposefully and create a sense of accountability among them regarding the advisor's advice. Khalil and Williamson (2014) went further to say,

> Well advised students are likely to continue enrolling in classes, staying on track by following their plan of study, and progressing towards graduation all while enjoying their time as a college student because they are well-informed and aware of what it will take to be successful (p. 78).

They further describe the role of academic advisors as "crucial for all students" (Khalil & Williamson, 2014, p. 78). Students themselves view academic advisors as vital advocates and feel they can share their concerns and express them openly, and then they will be more successful (Khalil & Williamson, 2014). Positive engagements like such lead to students valuing the academic advisor's advice and "likely to return for more advice, which in turn will help increase student enrollment, engagement, and graduation rates" (Khalil & Williamson, 2014, p. 79). When students engaged with academic advisors "sometimes" or "often," students expressed having more positive experiences than those who did not; in fact, persistence improved by 53% (Klepfer & Hull, 2012, p. 8).

Overall, academic advising is an observed student service that must be present in the partnership to improve student academic success on college campuses (Suvedi et al., 2015). In any event, academic advising connects first-year students to the college community, supports them developmentally, and helps institute belongingness for the holistic betterment of the student (O'Keeffe, 2013). Moreover, if utilized correctly, academic advisors can serve as formidable institutional agents to support college students (Museus, 2021). However, academic advising must be performed efficiently to affect student success.

Quality Advising Practices

Although academic advising commonly produces positive outcomes, researchers have linked these findings to key conceptual practices, emphasizing the importance of quality advising

and establishing purposeful, positive relationships. Successful dialogue between students and academic advisors must accompany these key concepts. Marques (2005) suggested that having a level of quality advising fosters purposeful, positive relationships. Academic advisors should: "…be involved in and knowledgeable of the student's position and program… be attuned to the student's personal well-being in the learning environment… be available… be honest…" and "maintain a peer-to-peer relationship." (Marques, 2005, pp. 4-5). However, it is equally important to note that academic advisors should value connections with advisees (Chan, 2016). Time with advisees is well spent and builds well-rounded advising opportunities and relationships. When academic advisors do not adequately allocate time to students and instead find themselves overwhelmed by excessive paperwork (Nel, 2014) or other job duties (Karr-Lilienthal et al., 2013), it places students at potential risk. One day of advising averaged seven meetings with students, and assuming each session takes one hour, it leaves academic advisors little time to engage with students through other modes of communication (Khalil & Williamson, 2014). The lack of engagement may result in several willing students seeking advisement but unable to schedule a meeting. However, when the time is taken by advisors to connect, even if it is through social media, students feel satisfied and empowered (Amador & Amador, 2014; Walker et al., 2017). Clear communication between advisors and students, assistance in graduation planning despite the student's classification as a new freshman, and the student's perception that the advisor knows their name are all indicators of student empowerment (Walker et al., 2017). Having a personal relationship with the student communicates that the advisor wants them to succeed and foster success in the student's life. It is important to note that while students may give high ratings to academic advisors for their knowledge and approachability,

their primary concern lies in how advisors demonstrate consideration for their goals and genuinely care about their growth and success (Noel-Levitz, 2014).

Another key concept of practice is demonstrating a developmental and probing mindset. When students perceived an academic advisor as being focused on the student's personal growth and cognitive development, it positively affected the student's perception of academic and campus involvement (Van et al., 2016). Cuseo (2011; 2016) recommends that the best way to cultivate a developmental and probing mindset is for advisors to discuss external obligations, previous experiences, and the confidence level of the student's expectations. This approach fosters transparency, enabling the identification of student goals, interests, and support systems. Having a developmental and probing mindset while going into engagements with students allows for dialogue to come more naturally; it also provides an opportunity for the student to make choices with the assistance of the academic advisor related to their academic goals, career goals, commitments, and more (Baker & Griffin, 2010). Many studies identified that students want sessions that have dialogue and exchange of ideas about bettering personal academic strategies, support on navigating personal issues, and how each ties to course planning and course registration (Amador & Amador, 2014; Khalil & Williamson, 2014; Sutton & Sankar, 2011; Van et al., 2015; 2016).

Similarly, LeBel (2016) noted that students seek a more holistic academic advising approach that allows them to discuss their academic progress, interests, passions, careers, and future aspirations with their academics. When students felt like they had an outlet to discuss these items, Sutton and Sankar (2011) observed that students felt satisfied and wanted to discuss further opportunities for solving long-term issues related to career opportunities and gaining access to academic tutoring services to increase their likelihood of academic progress. However,

a researcher has previously introduced this concept. Walsh (1979) detailed that academic advisors should adequately demonstrate that they know how to discuss the student's career goals, the relationship of coursework to those career goals, employment opportunities, and other related items that help the student persist and maintain academic progression. Candidly discussing academic progress, interests, passions, career and future aspirations, and academic challenges with students equips them with reminders of goals, strengthening their' success and progressing them toward graduation (Donaldson et al., 2016). According to Pargett (2011), the more students discussed personal and school-related topics such as academic goals, academic support services, academic/graduation plans, commitments outside of school, career interests, and regional employment opportunities, the more likely the student positively developed.

The CCCSE (2018) researched students' academic success when engaging with an academic advisor. One area they specifically analyzed was the specific topics of discussion between the student and academic advisor during the advising session. CCCSE (2018) observed of the students who reported having at least one engagement with an academic advisor only 25.20% of them reported having purposeful discussions with their academic advisor about future goals/planning; 86.14% of students said that their academic advisor clearly explained classes needed for the student to reach goals; 66.84% of students agree that their academic advisor helped them set educational goals and to create a plan for achieving the goals; 76.38% of students reported that their academic advisor discussed student services with them; 64.64% of students reported that their academic advisors created an academic plan with them; 52.82% of students agree that their academic advisor discussed the student's commitments outside of school; 65.44% of students reported that their academic advisor discussed when the student's next advising session will be held; 73.22% of students agree that their academic advisor

discussed career interests with them, and 39.22% of students agree that their academic advisor discussed regional employment opportunities with them.

The implication of having these topics of discussion with students is paramount to a student overcoming academic difficulties. Specifically, the students who reported having these discussion topics during their meeting with an academic advisor displayed higher benchmark means in overcoming academic difficulties than students who reported not having dialogue in these topic areas (CCCSE, 2018). The benchmark means ranged from 6 to 10 points greater than those who reported not having discussed topics of discussion areas with their academic advisor. Statistical analysis was not performed to determine a significance between the benchmark means. However, the results of this study are consistent with the literature that when academic advising sessions contain desirable and meaningful dialogue with students, and the dialogue is harmonious with the development of the student, then positive outcomes are more likely plausible.

Students Engaging Academic Advisors

As the college environment evolves, so are how students encounter inconsistencies and institutional difficulties that often lead to misconceptions and potential loss of enrollment. However, the presence of academic advising is proving to be a constant structure and pathway for students to overcome academic struggles and increasing student persistence when engaged by the students (Campbell & Nutt, 2008; Drake, 2011; Hughes, 2014; Tinto, 2016), while also bridging the gap between academic and personal matters (He & Hutson, 2016). Today's rigorous and complex academic curricula in higher education lead to high stress levels in students (Barker et al., 2018). Several studies noted that students want to engage with academic advisors who are accessible and resourceful in guiding the student through solving academic and personal matters,

caring, helpful, responsive, and have good quality communication skills (Al-Ansari et al., 2015; Barnes & Parish, 2017; Kohle et al., 2015; Teasley & Buchanan, 2016; Vianden, 2016). Pizzolatto (2008) stated, "Academic advising has moved toward providing guidance to students that focuses on meeting their learning and developmental needs" (p. 19). Several studies indicate that students perceive multiple benefits when they engage with quality academic advisors. These benefits include overcoming academic concerns and struggles, addressing long-term career problems and personal issues, developing a sense of self-efficacy, increasing the likelihood of retention through involvement in the campus community, and enhancing overall academic experiences and performance (Amador & Amador, 2014; Barnes & Parish, 2017; Chiteng Kot, 2014; Cunningham & Smothers, 2014; Soria et al., 2017; Teasley & Buchanan, 2016; Van et al., 2015, 2016; Vianden & Barlow, 2015). When students perceived academic advisors did not meet their desire for characteristics, it negatively influenced students to seek advice (Chan, 2016; Van et al., 2015; Vianden, 2016).

Chiteng Kot (2014) determined that academic advisors enable students to experience success early, especially in first-year gateway courses, resulting in first-year persistence and retention. In an additional study, academic advisors and advising programs tend to increase the likelihood of an increased overall GPA and improve student retention from semester to semester (Ryan, 2013). This finding aligns with Tinto's (2004, 2006) observations that students who actively engage with academic advisors tend to excel in academic courses, persist through academic difficulties, maintain their engagement with the institution, and enhance their chances of degree attainment. This finding holds particularly true when students perceive that their academic advisor genuinely cares about their well-being and when the advisor effectively meets

their needs. Similarly, Jones (2013) determined through a quantitative study that when students felt engaged with academic advisors, it enabled them to perform at higher academic levels.

Furthermore, positive relationships with academic advisors increase students' connection to the institution, leading to positive outcomes (Vianden & Barlow, 2015; Vianden, 2016). However, Donaldson et al. (2016) determined that many students still do not seek help and do not engage with academic advisors but rely solely on their motivation and self-effort despite the importance of engagement. This lack of engagement leaves students at risk of not establishing the necessary momentum early on in their academic life.

Theoretical Framework

The theoretical or conceptual framework develops a study's focus or narrows the research perspective (Roberts, 2010). Miles and Huberman (2014) went further to define theoretical/conceptual framework as "A conceptual framework explains, either graphically or in narrative form, the main things to be studied—the key factors, variables, or constructs—and the presumed relationships among them" (p. 20). The purpose of presenting the theoretical framework for this study is to guide higher education administrators' sights on the role academic advising may be serving in improving first-year gateway course completion rates.

Astin's (1984) Student Involvement Theory is most applicable to this research, commonly known as the Input-Environment-Outcome (I-E-O) model. Astin developed the I-E-O model when initially analyzing early studies focused on Ph.D. students. These studies looked at the production of Ph.D. students and their relationship to the student's undergraduate institutions (Astin & Antonio, 2012). In doing so, he noticed a trend that many of the studies focused on the environment provided by undergraduate institutions and how the environment produced Ph.D. students (Astin & Antonio, 2012). Within his work, Astin focused on students' characteristic

inputs and found that these also played a significant role in determining whether a student pursued a Ph.D. (Astin & Antonio, 2012). To that end, Astin combined environmental factors and student inputs to create a framework that allows higher education institutions to measure student outcomes holistically. The model considers the totality of controlled and uncontrolled variables and how each or a combination thereof produces an outcome. Essentially, Astin's model takes into consideration students' inputs (e.g., demographics, student background, previous experiences) and the college environment (e.g., experiences obtained while in college) and how each relates to student outcomes (e.g., retention, persistence, graduation) (Astin, 1984). It is important to note that Astin suggests that outcomes rely on student input. However, no input determines an outcome; instead, the environment is the intermediary between the input and the outcome. Therefore, the model provides a lens for researchers to gain a holistic picture of students' experiences and how higher education environments impact specific student outcomes as related to the student's development (Astin & Antonio, 2012).

It is also important to note that five basic assumptions about the model related to student involvement must be understood. Comparable to Tinto and Pusser (2006), nothing is more important than student involvement in the classroom and campus services. Therefore, the model requires students to demonstrate psychological and physical energy. Students' involvement is continuous despite the level of energy invested by the student. Students' involvement is measurable in qualitative and quantitative forms, gains from involvement are directly related to the extent of involvement, and academic performance is correlated to involvement (Astin, 1984).

Astin emphasizes that as students develop through engaging with institutional resources, e.g., academic advising, as pertaining to this study, they should become more active in the college experience and be successful. These engagements include formal academic settings,

informal faculty/staff interactions, formal and informal extracurricular activities, and peer-group interactions (Astin, 1984).

Examples of Astin's I-E-O Model within Higher Education

Chiteng Kot (2014) and Andrews and Tolman (2021) utilized this model in their respective studies to determine if positive outcomes are associated with student academic success when student involvement increases. In Chiteng Kot's (2014) study, the student's demographic, characteristics, and academic preparation were inputs. The environment was the student's interest in academic advising, and the outcome was the student's first-year academic performance and second-year enrollment behavior. After employing a series of regression models, the researcher determined that students who showed interest in and utilized centralized academic advising experienced a 31.4 percent increase in their first-term GPA and a 25.1 percent increase in their first-year GPA. These results were similar to students' second year. Furthermore, the researcher found that the students who utilized centralized academic advising experienced a net gain equivalent to a "C- to a C, a C to a C+, a C+ to a B-, a B- to a B, etc." (Chiteng Kot, 2014, p. 553). Overall, the findings emphasized the importance of academic advising at the early stage of a student's academic experience to impact student retention positively.

Similarly, Andrews and Tolman (2021) used Astin's I-E-O model to determine predictors of students' academic success. However, they specifically investigated the academic success of first-year corequisite English and mathematics gateway courses. The input was the students' demographics, such as sex, race, age at enrollment, Pell Grant recipient status, first-generation college student status, placement testing, high school GPA, and academic major. The environmental factors utilized in the study were the faculty's employment status, who was

instructing the corequisite gateway course, and whether the student had an interest and had utilized academic tutoring. After conducting a series of regressions, the researchers found that the two strongest predictors of student academic success in first-year corequisite English gateway courses were high school GPA and gender, specifically female. The three most robust predictors of student academic success in first-year corequisite mathematics gateway courses were high school GPA, faculty employment status, and appropriate mathematics course based on major. High school GPA was the strongest predictor in both first-year corequisite gateway-type courses. It is important to note, as related to this study, that Andrews and Tolman (2021) found that students' involvement with institutional resources, e.g., tutoring, was insignificant and had no impact on the model. Furthermore, Andrews and Tolman (2021) stated, "…it cannot be understated that other confounding variables existed that were not identified and included in this study which may have impacted the results" (p. 28).

Predictors of Student Academic Success in First-year Corequisite Gateway Courses

The researcher used Astin's I-E-O model as the guiding framework for this study. The researcher used two theory components to interact with first-year corequisite gateway courses and the *Outcome* described earlier: (1) I*nputs* and (2) *Environment*. The inputs will focus on academic success outcomes related to the student's academic preparedness—the eligibility of the student to enroll in first-year corequisite gateway courses is based on the academic placement standards of EGSC. Likewise, the environment component will focus on academic success outcomes related to the student's interest and engagement with an academic advisor.

Input

Placement Test and High School GPAs. EGSC utilizes two independent criteria in determining whether students are eligible for registering into first-year corequisite gateway

courses. The two criteria are placement test scores and high school GPA. Many students entering EGSC are placed into learning support education due to their placement test scores or lack thereof. This placement is consistent with ongoing trends in literature (Bettinger et al., 2013; Wilson, 2012). This trend continues in many two-year institutions despite several studies finding that placement test scores lack validity in being a reliable indicator for determining a student's placement into first-year credit-bearing coursework (Scott-Clayton et al., 2014; Xu, 2016). Early studies evaluating placement test scores as a metric in determining first-year course placement have determined that using placement test scores independently should not determine a student's placement into first-year gateway credit-bearing coursework (Massachusetts Board of Higher Education, 2016; Scott-Clayton & Rodriguez, 2015). Instead, it is best to use high school GPA as an independent metric in determining academic placement—high school GPA was a more reliable predictor than placement test scores when used independently, and high school GPA was a statistically significant predictor in determining the success of students in both English and mathematic courses (Logue et al., 2016; Williams & Siwatu, 2017).

More institutions have shifted away from using placement test scores in recent years. They are now utilizing high school GPA as a metric in determining a student's placement into academic coursework for first-year gateway courses. However, several studies have noted that institutions should combine placement test scores and high school GPAs. This collective metric is more likely to assign students to the proper level of first-year gateway coursework (Scott-Clayton et al., 2014).

Environment

Frequency of Meetings with Academic Advisors. Several studies indicate that the frequency of meetings between students and academic advisors affects the effectiveness of

advising (CCCSE, 2018; Chiteng Kot, 2014; Khalil & Williamson, 2014; Swecker et al., 2013; Vander Schee, 2007; Van et al., 2015; Van et al., 2016; Williamson et al., 2014). Two studies determined that students desire more opportunities to engage with their academic advisors (Barnes & Parish, 2017; Van et al., 2016). In 2017, the National Survey of Student Engagement (NSSE; 2015) found that most students met with an academic advisor two or more times; specifically, 89% of first-year students engaged in a meeting with an academic advisor. Khalil and Williamson (2014) noted that most students who engage with academic advisors are upperclassmen compared to first-year students. The robust engagement level may be because upperclassmen have graduation-specific questions related to finalizing the last semesters of coursework. Furthermore, this study also revealed that 50% of students met with academic advisors once or more in a semester, 50% met with an academic advisor within a year, and 20% did not engage with an academic advisor (Khalil & Williamson, 2014).

According to a survey by the CCCSE (2018), 77.76% of students reported engaging with an academic advisor, while only 22.33% reported not meeting with an academic advisor. The frequency of those who engaged with an academic advisor was as follows:

- 36.7% of students met with an academic advisor once.
- 29.55 of students met with an academic advisor twice.
- 33.98% met more than twice.

The students who met with an academic advisor more than twice demonstrated having a higher benchmark mean of overcoming academic difficulties than those who attended once or twice with an academic advisor. The difference between the benchmark means ranged between 4 and 6 points greater for those students who attended more than two meetings with an academic advisor than those who attended once or twice. Statistical analysis was not performed to

determine a significance between the benchmark means. CCCSE's 2014 study determined that students in developmental courses who met with an academic advisor to set goals and create an academic plan were 1.3 times more likely to complete developmental courses compared to students who did not seek out academic advising during their first term in college (CCCSE, 2014). In addition, if an academic advisor reached out to an academically struggling student for a meeting, the student was 1.7 times more likely to complete developmental courses than those who did not follow up with a meeting with the academic advisor (CCCSE, 2014).

Furthermore, Vander Schee (2007) observed that students on academic probation who attended three to eight meetings ($n = 11$) had a significant improvement in a semester as measured by GPA than those who attended none, one, or two meetings ($n = 23$). This finding implied that the frequency of advisement meetings beginning with three and up to eight positively affected academic achievement. Echoing Vander Schee's (2007) findings, Williamson et al. (2014) observed that the frequency of meetings with an academic advisor related to a student's academic achievement was impactful for those who attended academic advising sessions. However, Williamson et al. (2014) discovered a difference in that attending a minimum of one academic advising session was sufficient to demonstrate a significant influence on a student's academic achievement, rather than observing three sessions before observing an important influence. Specifically, Williamson et al. (2014) found that students who met once with an academic advisor had a success rate of 70% compared to 30% for those who did not attend academic advising sessions. Furthermore, those who participated in an academic advising session twice persisted from the fall semester to the spring semester at an 85% rate compared to 32% of those students who did not attend an academic advising session. This outcome was statistically significant ($p \leq .05$). Additionally, the analysis reflected that students who attended

two academic advising meetings earned a higher passing rate (grades: A, B, or C) of 76% compared to those students who did not attend an academic advising session at a passing rate of 21.5% with the same grade range; and 79% of students who attended two advising sessions reflected a GPA of 2.0 or higher compared to 24% of student who did not attend an academic advising session in the fall semester (Williamson et al., 2014).

Additional research by Chiteng Kot (2014) determined that students who utilized centralized advisement—professional academic advisors who serve specific student groups—had a significantly higher first-term GPA by 31 percentage points—equivalent to the difference between a C and a B— and a higher cumulative GPA by 25 percentage points at the end of their first academic year than their counterparts who did not utilize advisement. Overall, the results emphasized that early engagement in the first year with advisors positively and significantly impacted students' first-term and first-year grades, first-year retention, and further retention into their second year and beyond. Previously, Robbins et al. (2009) established a positive correlation between student attendance at academic advising sessions and first-year retention, similar to Chiteng Kot (2014). However, Robbins et al. (2009) found GPA and first-year grades—a key predictor of student persistence in first-year to second-year retention according to Allen et al. (2008)—was unexpectedly related to slightly decreased student GPA at a -0.11 correlation when the frequency of academic advising sessions increased. The assumption suggested that a dependency might have been created, resulting in a lack of student autonomy. This level of engagement ultimately led to a negative correlation once the frequency of meetings met a certain numerical threshold (Robbins et al., 2009). Notably, the frequency of advising sessions ranged from zero to 34.

Likewise, Swecker et al. (2013) noted that every unit of a student meeting with their academic advisor increased their likelihood of retention by 13%. Furthermore, Robbins et al. (2009) found that higher-risk, lower-ability, and underprepared students are more likely to utilize academic services and attend advising sessions more frequently than academically prepared ones. In continuance, Bahr (2008) determined that academic advising has a statistically significant ($p \leq .001$) relationship in helping students achieve successful completion in remediation—students who engaged with an academic advisor while taking remedial mathematics exhibited a positive correlation of successful completion.

Length of Meetings with Academic Advisors. The CCCSE (2018) analyzed the length of time students engaged with academic advisors. Those students reported the following through the survey:

- 31.18% of students met for 15 or fewer minutes.
- 46.44% of students met for 16-30 minutes.
- 16.25% of students met for more than 30 minutes.
- 6.07% of students could not remember the length of the engagement.

Of the categorial lengths of time, students who met with an academic advisor for more than 30 minutes demonstrated having a higher benchmark mean of overcoming academic difficulties than those who attended 15 minutes or less, 16-30 minutes, or could not remember. Ample and consistent research determined that the number of advisor meetings predicts student success. However, the literature on meeting length could be more robust.

Timing of Student/Advisor Engagement During Semester. Timing is critical to ensuring opportunities for students and academic advisors to engage with each other. Although there is a gap in the literature in determining the best time an academic advisor should engage

with a student throughout a semester to capitalize on the greater chances of a student being successful, there is literature that provides a general direction related to critical times an academic advisor should create opportunities during the semester to engage with students. The critical times in which these moments often occur are after a student has enrolled in the institution.

Garing (1993) suggests that academic advisors should create opportunities for engagement between the student and advisor at four critical times during the semester: *three weeks*, *six weeks*, *pre-registration* or *point of registration*, and *between semesters*. Each stage assumes the student engages and responds to the academic advisor's invitations. At *three weeks*, first-year students frequently find themselves settling as they have met other students and have a better understanding of the campus environment. As a result, this timing creates an opportunity for academic advisors to capture students' attention and create a moment of engagement through invitation. The invitational engagements should come in two types of forums- a group meeting and an individual meeting. These meetings allow for early discussions on academic and personal adjustment, responsibilities, the setting up of future individual appointments, and information regarding academic resources. Additionally, these meetings are the most impressionable moments between a student and an academic advisor during the semester because it is a moment of first impression.

In the first impression moment, students will decide if a relationship is possible as they desire to look for a positive and functional advisee-advisor relationship (Walker et al., 2017). At *six weeks*, academic advisors should increase their intervention to support their students positively. This engagement will involve highlighting discussions about mid-term grades, academic trends, tutorial assistance, establishing plans for improvements, conducting candid

conversations, discussing future semester courses, and addressing graduation-related matters. At this point, trust is developed or not in the student-advisor relationship. Students' perceptions of academic advisors are heavily determined by how well the academic advisor transparently communicates and shares information with the student (Walker et al., 2017). Students can pick up on missing components in advisor communication. If this mishap occurs, the likelihood of a student-advisor relationship remaining substantial diminishes. At *pre-registration* or the *point of registration,* the academic advisor should actively make it a point to discuss decision-making and clarification. The advisor is not simply signing off on registration of courses for the following semester. Instead, the advisor is proactively discussing a course of action for both satisfactory and unsatisfactory students, persuading students to consider the appropriate course of action based on the student's status, encouraging students to complete the financial aid process, look at internships, opportunities for academic help, reconsideration of priorities, help undecided or at-risk students who may be confused to develop a timetable that works for the student, and finally develop with the student a course map for the following semesters based the path of the student. Lastly, is the *between semesters* critical point of engagement. Remaining actively involved with students between semesters requires invasive intervention. Students tend to disengage from the college. However, academic advisors remain a point of structure and support for the college student so that students may not become isolated or lose momentum.

Chapter Summary

In summary, high school graduates are entering college academically underprepared at an increasing rate, resulting in students being unsuccessful in first-year gateway courses—a known barrier to student persistence, retention, and degree attainment. To increase students' successful completion rates in first-year gateway courses, educational leaders have strategically

implemented new learning support models and increased the presence of academic advising services on campuses specific to student groups. Implementing a learning support model has increased overall success rates and retention of students attempting first-year English and mathematics gateway courses. However, academic and student affairs initiatives complement each other and unite to better the student holistically. Therefore, student engagement with academic advisors early on is also essential to the development of the student. When student engagements occurred early with academic advisors, studies showed positive student academic outcomes in the first semester and the first year. Academic advisors are in prime positions to potentially influence students' successes more positively than other community counterparts. However, most of the research on academic advising has been on student satisfaction surveys with the advisement process rather than on the predictors of student academic success.

The lack of emphasis on identifying academic success predictors leads to a great need for more practitioners to research the interpersonal engagements and connections between students and academic advisors that may predict students' academic success. Seeking more into the depths of academic advising practices is a clear gateway for postsecondary institutions to begin to improve students' overall outcomes. However, it is worth noting that most research on academic advising provides anecdotal or correlational evidence at best, and the review of academic advising is far from considered comprehensive or appropriate.

In closing, there is limited empirical data to indicate predictors of student academic success when reviewing the interactions between students and academic advisors. Therefore, the purpose of this bivariate correlational quantitative study is to determine to what extent the frequency of sessions, the length of time per session, and the first instance in which engagements

occur within the semester between students and professional academic advisors predict students' course outcomes (successful; unsuccessful) in first-year corequisite gateway courses.

CHAPTER 3

METHODOLOGY

Students' engagements with academic advisors are critical to improving students' completion rates in first-year gateway courses. In turn, the engagements should improve the completion of first-year gateway courses and institutional enrollment numbers at EGSC and advance student retention, persistence, and degree attainment initiatives within the USG. Most of the literature related to students' engagements with academic advisors suggests that students will have more successful course outcomes, resulting in the retention of students if they engage with academic advisors versus those students who do not.

EGSC implemented a centralized academic advising model to serve students attempting first-year corequisite gateway courses. In the centralized academic advising model, the institution tasked each professional academic advisor to actively engage with all assigned first-year students who attempt first-year corequisite coursework and ensure they complete their first-year corequisite gateway courses. These engagements included fostering student purpose, making beneficial choices, and productive academic mindsets. In addition, the engagements include guiding students with program maps to earn 30 credit hours at the end of the first year.

By reviewing enrollment and retention trends of EGSC, this study identified the need to evaluate academic advising as the area of focus for determining how the centralized academic advising model influenced the completion rates of students attempting first-year gateway courses. Furthermore, addressing this research area encourages academic advisors to maintain continuous engagement with students attempting first-year corequisite gateway courses, thereby improving students' completion of first-year gateway courses at EGSC.

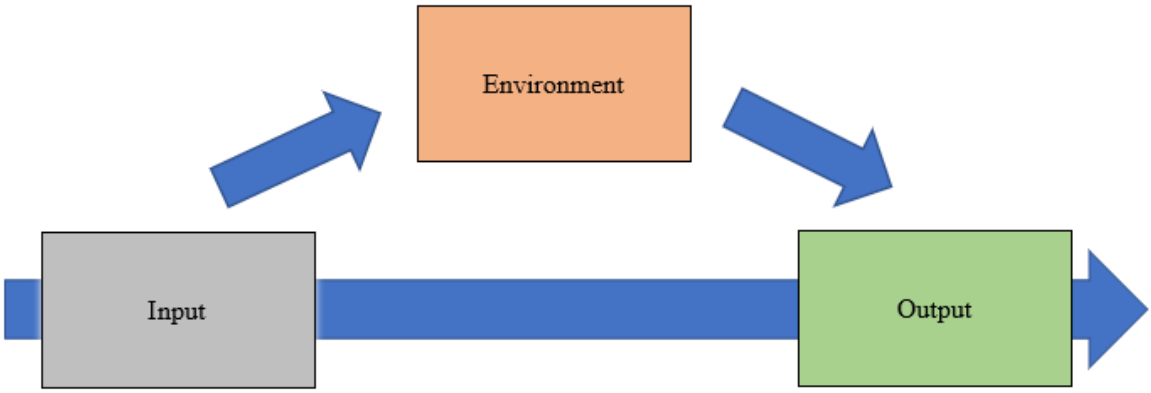
The overarching research question guiding this study was: To what extent do the frequency of sessions, the length of time per session, and the first instance in which engagements occur within the semester between students and professional academic advisors predict students' course outcomes (successful; unsuccessful) in first-year corequisite gateway courses? In the pursuit of answering this question, this study intended to add to the literature on higher education's academic support services and inform educational leaders of strategies pertaining to academic advising to increase students' success in first-year corequisite gateway courses. Moreover, this study sought to understand the nature of professional academic advisors' engagements with students that would contribute to improving students' first-year gateway course completion. This increase in course completion, in turn, sheds light on improving institutional enrollment and retention numbers.

Theoretical Framework: Astin's I-E-O Model

Applying Astin's I-E-O model to this study was deemed appropriate as it aimed to identify predictors of student academic outcomes in first-year corequisite gateway courses when students actively engage with academic advising as an influential environment, see Figure 1. This model allowed the researcher to investigate the relationship between *environment* and *outcome* when the environment is the acting independent variable and the outcome is the dependent variable. The *input* does not decide an outcome but acts as a basis for when the environment is applied to determine an output. It is important to note that students' input can often mitigate the pros and cons of any environment. Nevertheless, the environment is the intermediary between the input and the outcome. See Figure 1.

Figure 1

Astin's Input-Environment-Outcome (I-E-O) Model



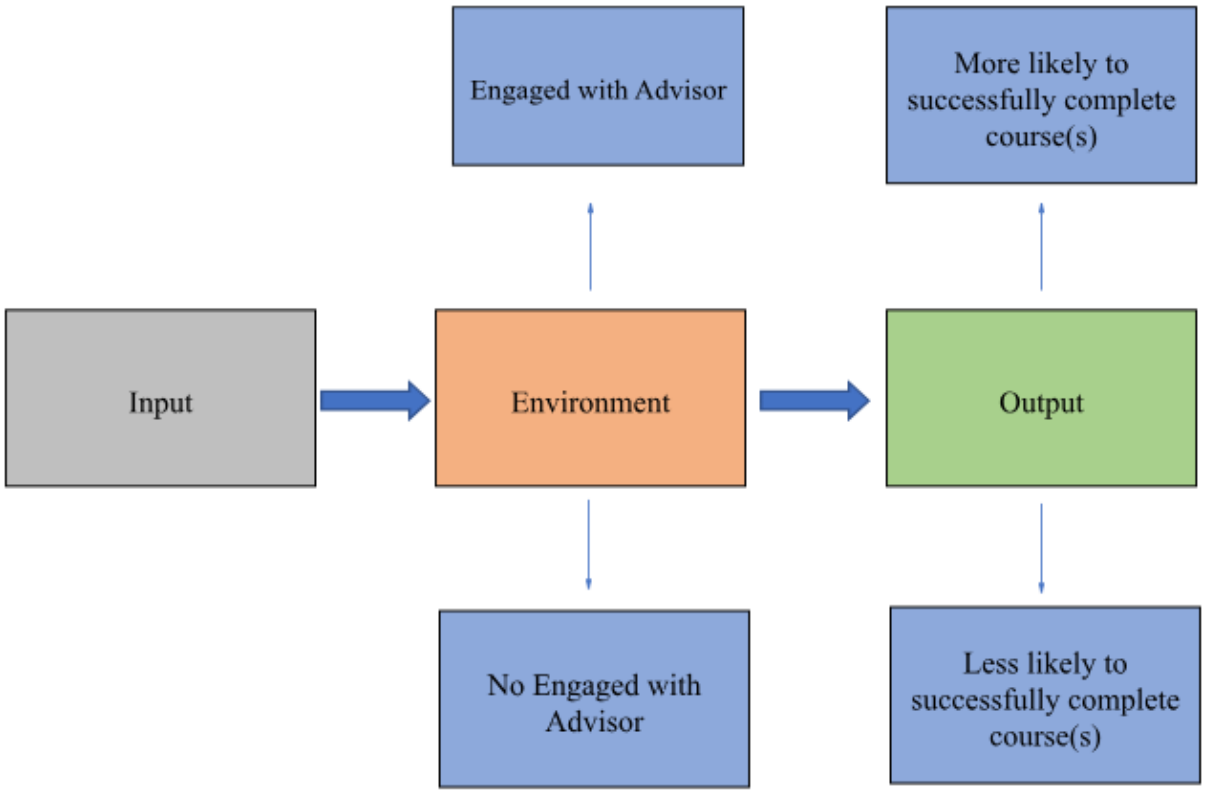
In this study, the environmental factor is academic advising. The researcher utilized academic advising similarly to how Chiteng Kot (2014) employed the environmental factor in his research. Specifically, Chiteng Kot (2014) utilized a centralized advising model as the environment in which students were or were not exposed. In doing so, it allowed Chiteng Kot (2014) to observe if the exposure to the centralized advising model impacted the first-term GPA, second-term GPA, and first-year cumulative GPA. Furthermore, we identify academic advising as an environment in this study, whereas Andrews and Tolman (2021) did not identify it as an environment in their study. Instead, Andrews and Tolman (2021) assumed that academic advising was encompassed as a confounding variable as they described, "… it cannot be understated that other confounding variables existed that were not identified and included in this study which may have impacted the results" (p. 28). Academic advising may have been a confounding environment that influenced students' success in corequisite courses.

In this study, the researcher considered the student's academic preparedness as the input, specifically the student's enrollment in first-year corequisite gateway courses based on EGSC's academic placement standards. The *environment* in this study was the student's interest and

engagement with an academic advisor, specifically, the frequency of engagements, the length of engagement(s), and the first instance in which engagements occur within the semester between the student and academic advisor. Lastly, the *outcome* of this study was whether the student completed or unsuccessfully completed the first-year corequisite gateway course. See Figure 2.

Figure 2

Input-Environment-Outcome (I-E-O) Logic Model in this Study



Utilizing Astin's model in this study would assume that students' involvement with academic advising is a predictor in improving first-year corequisite gateway course success without explicitly stating that academic advising had a direct influence. Furthermore, the model enables individual observation of each variable's relationship to improving first-year corequisite gateway course success. Again, there is an assumption that students display a level of

involvement. Students motivated to engage early with institutional resources were likelier to persist in college (Shoulders et al., 2020).

Research Design

This was a bivariate correlational quantitative study. A *bivariate correlational study* is a research design set to examine the relationship between two variables (Creswell & Creswell, 2018). In this study, the researcher sought to understand whether a statistical association or connection existed between the independent variable and dependent variable and the direction and strength of that association. Specifically, the study aimed to identify predictor variables that contributed to the successful completion of first-year corequisite gateway course(s) when considering the nature of students' and professional academic advisors' engagements in the centralized advising model. To do so, an overarching question was answered: To what extent do the frequency of sessions, the length of time per session, and the first instance in which engagements occur within the semester between students and professional academic advisors predict students' course outcomes (successful; unsuccessful) in first-year corequisite gateway courses?

According to Creswell and Creswell (2018) and Osborne (2014), it is best to use a logistic regression design framework to examine the development of ideas and trends. A logistic regression is a statistical method used to analyze datasets in which there are one or more independent variables (predictors) that determine an outcome, which is binary; and is used for binary classification tasks, where the goal is to predict the probability that an instance belongs to one of two classes or groups (Creswell & Creswell, 2018; Osborne, 2014). In this study, the logistic regression examined the trend(s) related to interactions between academic advisors and students. Using the provided de-identified archival data, the logistic regression framework

allowed the researcher to construct a clearer picture of the gains received when evaluating the degree of relationship between the frequency of sessions, the length of time per session, and the first instance in which engagements occur within the semester during students' engagements with professional academic advisors to predict the course completion outcomes as measured by final course grade (successful, unsuccessful) of students who are enrolled in first-year corequisite gateway courses.

Setting

The researcher conducted this study at EGSC, located in mid-east Georgia. EGSC is a public institution and is part of the USG. EGSC is considered a multi-instructional site institution, meaning it has several sites where undergraduate-level course instruction occurs. The primary instructional site is in Swainsboro, GA. There are two other instructional sites in Statesboro, GA, and Augusta, GA. Other larger USG institutions house each of these instructional sites on their campuses. Furthermore, EGSC is an associate degree dominant institution; however, it provides selective undergraduate instruction programs at the baccalaureate level. Table 1 displays the student enrollment for the institution (USG, n.d.a).

Table 1

East Georgia State College Enrollment Trend

Semester	Student Enrollment
Fall 2018	2,942
Spring 2019	2,523
Summer 2019	823
Fall 2019	2,741
Spring 2020	2,393

Summer 2020	849
Fall 2020	2,415
Spring 2021	2,393
Summer 2021	645
Fall 2021	2,023
Spring 2022	1,540

The setting also includes the gateway courses taught at EGSC. The College's 2020-2021 catalog description for ENGL 1101 defines the course as follows:

> A composition course focusing on skills required for effective writing in a variety of contexts, with emphasis on exposition, analysis, and argumentation, and also including introductory use of a variety of research skills. (East Georgia State College, 2020b).

The College's 2020-2021 catalog descriptions for MATH 1001, MATH 1101, and MATH 1111, defines the courses as:

> MATH 1001- Course places quantitative skills and reasoning in the context of experiences that a student will likely encounter. Emphasis is placed on acquiring skills that will enable a student to construct logical arguments based on rules of inference and to develop strategies for solving quantitative problems (East Georgia State College, 2020b).
>
> MATH 1101- An introduction to mathematical modeling using graphical, numerical, symbolic, and verbal techniques to describe and explore real-world data and phenomena. Emphasis is on the use of elementary functions to

> investigate and analyze applied problems and questions supported by the use of appropriate technology, and on effective communication of quantitative concepts and results (East Georgia State College, 2020b).
>
> MATH 1111- A functional approach to algebra that incorporates the use of appropriate technology. Emphasis will be placed on the study of functions, their graphs, inequalities, and linear quadratic piece-wise defined rational, polynomial, exponential, and logarithmic functions. Appropriate applications will be included (East Georgia State College, 2020b).

Population

This study included data points from students who initially attempted a first-year corequisite English gateway course (ENGL 1101) and a first-year corequisite mathematics gateway course (MATH 1001, MATH 1101, and MATH 1111) for the first time and were assigned as advisees to the professional academic advisors in the centralized academic advising model. These students were enrolled in one or more semesters (Fall, Spring, and Summer) between Fall 2018 and Spring 2022.

According to the institution's placement standards, all students not exempt from first-year corequisite learning support placement are enrolled in first-year corequisite gateway courses and assigned to professional academic advisors. The placement standards derive from high school GPA (HSGPA) and test scores in either SAT, ACT, or Accuplacer. Each plays a role in determining whether the student requires corequisite learning support courses. Students may be exempt from corequisite learning support courses if they have a calculated HSGPA or provide test scores that exceed the threshold for the need of the student to take corequisite learning support courses. Students who meet one of the following placement standard conditions are

exempt from corequisite learning support coursework, as described in Table 2 and Table 3 (EGSC, 2020a).

Table 2

Learning Support Placement Standards by HSGPA

HSPGA	Placement
≥ 2.5 HSGPA	Exempt corequisite learning support in ENGL 1101, MATH 1001, and MATH 1101.
≥ 2.8 HSGPA	Exempts corequisite learning support for ENGL 1101, MATH 1001, MATH 1101, and MATH 1111.

Note. A student's HSGPA greater than or equal to 2.5 but less than 2.8 is placed into corequisite learning support for MATH 1111.

Table 3

Learning Support Placement Standards by Test Scores

Test	Scores	Placement
Accuplacer	Reading ≥ 237 and Writing ≥ 4	Exempts corequisite learning support for ENGL 1101.
	Quantitative Reasoning, Algebra and Statistics ≥ 258	Exempts corequisite learning support for MATH 1001 and MATH 1101
	Quantitative Reasoning, Algebra and Statistics ≥ 266	Exempts corequisite learning support for MATH 1001, MATH 1101, and MATH 1111.

ACT	English ≥ 17	Exempts corequisite learning support for ENGL 1101.
	MATH ≥ 17	Exempts corequisite learning support for MATH 1001 and MATH 1101
	MATH ≥ 20	Exempts corequisite learning support for MATH 1111.
SAT	Evidence-Based Reading & Writing ≥ 480	Exempts corequisite learning support for ENGL 1101.
	MATH ≥ 440	Exempts corequisite learning support for MATH 1001 and MATH 1101.
	MATH ≥ 510	Exempts corequisite learning support for MATH 1111.

Note. A student's score in math that is greater than or equal to a 258 on the Accuplacer, 17 on the ACT, or 440 on the SAT, but is less than 266 on the Accuplacer, 20 on the ACT, or 510 on the SAT is placed into corequisite learning support for MATH 1111.

The participants who attempted first-year ENGL 1101 in a corequisite learning support model for the first time between the Fall 2018 and Spring 2022 semesters were 2,055 students. The participants who initially attempted first-year MATH 1001, MATH 1101, or MATH 1111 in a corequisite learning support model for the first time between Fall 2018 and Spring 2022 semesters were 2,843 students. Table 4 describes the population's demographics for those who attempted first-year corequisite English and mathematics gateway courses.

Table 4

Population Demographics from Fall 2018 thru Spring 2022

Population	Mean age at point of initial attempt	Sex	Race/Ethnicity
First-Year Corequisite English Gateway Course *(N* = 2,055*)*	19.25	56%Female 44% Male < 1% Unknown	66% Black or African American 23% White (Non-Hispanic Origin) 7% Multiracial 2% Hispanic 2% Unknown 1% Asian < 1% American Indian or Alaskan Native < 1% Native Hawaiian/Pacific Island
First-Year Corequisite Math Gateway Courses *(N* = 2,843*)*	19.70	57% Female 42% Male < 1% Unknown	61% Black or African American 27% White (Non-Hispanic Origin) 7% Multiracial 2% Hispanic 1% Asian 1% Unknown < 1% American Indian or Alaskan Native < 1% Native Hawaiian/Pacific Island

Data Collection

This study's data collection approach used de-identified archival data. The Office of Strategic Planning and Institutional Research at EGSC agreed to provide access to the archival data for the outcomes of these students' success in the gateway courses. The analysis of archival quantitative data would answer the research question: To what extent do the frequency of sessions, the length of time per session, and the first instance in which engagements occur within

the semester between students and professional academic advisors predict students' course outcomes (successful; unsuccessful) in first-year corequisite gateway courses?

A Letter of Cooperation from the Office of Strategic Planning and Institutional Research at EGSC was obtained and included in the Institutional Review Board (IRB) applications. Approvals were sought from EGSC's and GSU's IRB before data collection began. After IRB approval, the Office of Strategic Planning and Institutional Research at EGSC extracted and provided a de-identified dataset to the researcher once de-identified archival data from the education management databases, Ellucian Banner 9 INB and Education Advisory Board (EAB) GradesFirst. Argos, an extracting management system, extracted data from Ellucian Banner 9 INB. The Ellucian Banner 9 INB education management database housed data in the form of the term of when the student attempted a first-year corequisite gateway course, the attempted gateway course subject code and subject number, final course grade code, age, binary gender, and ethnicity/race. EAB GradesFirst housed data in the form of the frequency of meetings between a student and professional academic advisor throughout the academic semester in which the student attempted a corequisite gateway course, the length of time per session, and the date of the first instance in which a student and professional academic advisor engaged.

The dataset was extracted and provided in a Microsoft Excel spreadsheet. The Microsoft Excel spreadsheet was saved in an encrypted file and stored on a password-protected computer. Once the original dataset was encrypted and saved, the researcher modified the dataset by using Microsoft Excel. The modification occurred for two reasons. First, to identify cases where students did not meet the qualifications not to be included in the dataset. Specifically, the researcher removed the second attempt for students who had multiple attempts of first-year corequisite gateway courses, and the researcher retained only their first attempt. Additionally, the

researcher excluded students not assigned to a professional academic advisor in the centralized advising model, even if they attempted a first-year corequisite gateway course(s). The second reason the research modified the dataset was to collapse data into multiple categories.

The Microsoft spreadsheet included the following columns of de-identified data:

1. The term description of when the student attempted a first-year corequisite gateway course
2. The gateway course attempted by the student subject code
3. The gateway course attempted by the student subject number
4. Students' first-year corequisite gateway course final grade code (e.g., A, B, C, D, F, W, I)
5. The frequency of student meetings with professional academic advisors measured by single units (e.g., 1, 2, 3)
6. The length of time of the meeting(s) measured in minute units
7. The date (e.g., mm/dd/yyyy) of the first instance in which a student and professional academic advisor engaged
8. Age
9. Binary gender
10. Ethnicity/race

Each column included individual rows of student data for each column of the data point.

Data Analysis

Upon the receipt and clean-up of the de-identified archival dataset, the researcher collapsed data into multiple categories. The researcher collapsed the total population of students who attempted first-year corequisite gateway courses for the first time between the Fall 2018 and Spring 2022 semesters into two categories: first-year corequisite English gateway course

population (N = 2,055) and first-year corequisite mathematics gateway courses population (N = 2,843). All first-year corequisite mathematics gateway courses (MATH 1001, MATH 1101, MATH 1111) were combined into one category because each course satisfied the first-year mathematics requirement of EGSC's core curriculum and has a corequisite learning support component attached to the course.

The researcher also collapsed the grade distribution into two categories: successful completion and unsuccessful completion. A successful completion included grades A, B, and C. An unsuccessful completion included D, F, Withdraw [W], Withdraw Fail [WF], Incomplete [I], and other grades that do not reflect indicated passing grades.

The frequency of sessions and length of sessions remained continuous (ratio scaling) predictors. In contrast, the researcher collapsed the time of the first instance in which engagements occurred within the semester between students and professional academic advisors into three categories: pre-registration, typical registration, and late registration. A "no meeting" category was not created because this category would be irrelevant to the statistical analysis that was conducted to answer the research question. A pre-registration equates to "met with a professional academic advisor before registration opened for enrollment," and typical registration equates to "met with a professional academic advisor within four weeks after registration began." Late registration is "met with a professional academic advisor after the first four weeks of registration elapsed."

After the researcher collapsed the data points, all data were exported to the Statistical Package for the Social Sciences (SPSS) for analysis. The bivariate correlational quantitative study used correlational statistical measures to fully explore if the predictors' frequency of sessions, length of time per session, and the first instance (defined as pre-registration, typical

registration, late registration) in which engagements occur within the semester between students and professional academic advisors predict the course completion outcomes as measured by final course grade (successful: A, B, C; and unsuccessful: D, F, Withdraw [W], Withdraw Fail [WF], Incomplete [I], and other grades that do not reflect indicated passing grades) of students who are enrolled in first-year corequisite gateway courses (as defined as ENGL 1101, MATH 1001, MATH 1101, and MATH 1111). Then, a series of binary logistic regressions were deployed to answered the research question: To answer to what extent the frequency of session(s) between students and professional academic advisors predicts the course completion outcomes as measured by final course grade (successful, unsuccessful) of students enrolled in first-year corequisite gateway courses a single binary logistic regression was deployed. To answer to what extent does the length of time of the session(s) between students and professional academic advisors predict the course completion outcomes as measured by final course grade (successful, unsuccessful) of students who are enrolled in first-year corequisite gateway courses, a second single binary logistic regression was deployed. To answer to what extent does the first instance in which engagements occur within the semester between students and professional academic advisors predict the course completion outcomes as measured by final course grade (successful, unsuccessful) of students who are enrolled in first-year corequisite gateway courses a tertiary single binary logistic regression was deployed.

Chapter Summary

Students' engagements with academic advising are critical to improving students' completion rates in first-year gateway courses and institutional enrollment numbers at EGSC, as well as improving student retention, persistence, and degree attainment initiatives in the USG. Most of the literature related to students' engagements with academic advisors suggested that

students have more successful course outcomes and display higher success rates in a course, resulting in the retention of students if they attended meetings with academic advisors versus those students who did not. Therefore, EGSC implemented a centralized academic advising model to serve students attempting first-year corequisite gateway courses and tend to the core elements of students' successes when attempting first-year corequisite gateway courses. Using data points from de-identified student archival data and utilizing bivariate correlational statistical tests that include a series of binary logistic regressions, the researcher analyzed students who attempted a first-year corequisite English and mathematics gateway courses for the first time and were assigned as advisees to the professional academic advisors to determine if these students' final course grade in first-year corequisite gateway courses were predicted by the frequency of sessions, length of sessions, and the first instance in which engagements occur within the semester between students and professional academic advisors. Not only did this research address the improvement of students' success in first-year gateway courses, but it also helped in adding to the literature that guides the area of higher education's academic support services. Furthermore, the study informs educational leaders of the strategies pertaining to academic advising to increase students' success in first-year corequisite gateway courses and improve retention rates of such students.

CHAPTER 4

RESULTS

The following chapter presents the findings of this study. First, descriptive statistics for students enrolled in first-year corequisite English and mathematics gateway courses are presented. These include data points of students' ages, sex, and ethnicity when they initially enrolled in the courses. Lastly, results from a series of binary logistic regression analyses will be presented for first-year corequisite English and mathematics gateway courses.

Educational leaders identified two strategies to improve first-year students' successful completion rates in first-year gateway courses. The two strategies implemented by EGSC were the corequisite learning support model and the centralized advising model. The corequisite learning support model contributes to increased course success rates and retention of first-year students attempting first-year English and mathematics gateway courses (Denley, 2017). Since implementing the centralized advising model, an empirical study has not been conducted to evaluate how students' engagements with academic advisors contributed to the success of those who attempted first-year corequisite English and mathematics gateway courses. This quantitative study used archival data to answer the following research question:

To what extent do the frequency of sessions, the length of time per session, and the first instance in which engagements occur within the semester between students and professional academic advisors predict students' course outcomes (successful; unsuccessful) in first-year corequisite gateway courses?

The research question is answered below in narrative and tabular form.

Descriptive Statistics

In this study, *n* = 2,055 students enrolled in a first-year corequisite English gateway course between Fall 2018 and Spring 2022, see Table 5. The average age of these students was 19.25 years (*SD* = 3.86), with ages ranging from 17-66. There were more females (*n* = 1,142) than males enrolled in a first-year corequisite English gateway course. Lastly, more Black or African Americans (*n* = 1,348) enrolled in a first-year corequisite English gateway course than any other ethnicity group.

Table 5

Descriptive Statistics of Students in First-Year Corequisite English Gateway Course

Demographics		*n*	*%*
Age	Younger than 18	93	5%
	18-20	1756	85%
	21-24	112	5%
	25+	96	5%
Sex	Female	1142	56%
	Male	910	44%
	Unknown	3	< 1%
Race/Ethnicity	Black or African American	1348	66%
	White (Non-Hispanic Origin)	464	23%
	Multiracial	145	7%
	Hispanic	38	2%
	Unknown	32	2%
	Asian	17	1%
	American Indian or Alaskan Native	7	< 1%
	Native Hawaiian/Pacific Island	4	< 1%

The age group 25+ (*n* = 96) had the highest success rate (58%) in a first-year corequisite English gateway course compared to the other age groups, see Table 6. Females (*n* = 1,142) had a higher success rate (43%) in the first-year corequisite English gateway course than males, and Native Hawaiian/Pacific Islanders (n = 4) had the highest success rate (75%) than the other listed ethnicities. The dependent variable was whether a student was successful or unsuccessful in

passing the first-year corequisite English gateway course. The successful group was coded 1 and otherwise as 0.

Table 6

Descriptive Statistics of Students in First-Year Corequisite English Gateway Course by Outcome

Demographics		Outcome	
		Successful (%)	Unsuccessful (%)
Age	Younger than 18	36 (39)	57 (61)
	18-20	714 (41)	1041 (59)
	21-24	58 (52)	54 (48)
	25+	55 (58)	40 (42)
Sex	Female	488 (43)	654 (57)
	Male	373 (41)	536 (59)
	Unknown	1 (25)	3 (75)
Race/Ethnicity	Black or African American	483 (36)	866 (64)
	White (Non-Hispanic Origin)	263 (57)	201 (43)
	Multiracial	66 (47)	79 (53)
	Hispanic	18 (46)	20 (54)
	Unknown	12 (40)	18 (60)
	Asian	13 (76)	4 (24)
	American Indian or Alaskan Native	5 (71)	2 (29)
	Native Hawaiian/Pacific Island	3 (75)	1 (25)
Total		863 (42)	1192 (58)

Furthermore, in this study, n = 2,843 students enrolled in a first-year corequisite mathematics gateway course between the Fall 2018 and Spring 2022 semesters, see Table 7. The average age of these students was 19.70 years (SD = 4.73), with ages that ranged from 17-66. There were more females (n = 1,632) than males enrolled in a first-year corequisite mathematics

gateway course. Lastly, more Black or African Americans (*n* = 1,724) enrolled in a first-year corequisite English gateway course than any other ethnicity group.

Table 7

Descriptive Statistics of Students in First-Year Corequisite Mathematics Gateway Courses

Demographics		*n*	*%*
Age	Younger than 18	114	4%
	18-20	2344	82%
	21-24	187	7%
	25+	198	7%
Sex	Female	1632	57%
	Male	1208	42%
	Unknown	3	< 1%
Race/Ethnicity	Black or African American	1724	61%
	White (Non-Hispanic Origin)	777	27%
	Multiracial	210	7%
	Hispanic	54	2%
	Unknown	39	1%
	Asian	19	1%
	American Indian or Alaskan Native	11	< 1%
	Native Hawaiian/Pacific Island	7	< 1%

The age group 25+ (*n* = 198) had the highest success rate (62%) in first-year corequisite mathematics gateway courses than the other age groups, see Table 8. Females (*n* = 1,632) had a higher success rate (54%) in the first-year corequisite mathematics gateway courses than males, and American Indian or Alaskan Native (n = 9) had the highest success rate (82%) compared to the other listed ethnicities. The dependent variable was whether a student was successful or unsuccessful in passing the first-year corequisite mathematics gateway courses. The successful group was coded 1 and otherwise as 0.

Table 8

Descriptive Statistics of Students in First-Year Corequisite Mathematics Gateway Courses by Outcome

Demographics		Outcome	
		Successful (%)	Unsuccessful (%)
Age	Younger than 18	64 (56)	50 (44)
	18-20	1200 (51)	1144 (49)
	21-24	99 (53)	88 (47)
	25+	124 (62)	74 (38)
Sex	Female	883 (54)	749 (46)
	Male	602 (50)	606 (50)
	Unknown	2 (67)	1 (33)
Race/Ethnicity	Black or African American	783 (45)	943 (55)
	White (Non-Hispanic Origin)	518 (67)	259 (33)
	Multiracial	102 (49)	108 (51)
	Hispanic	33 (61)	21 (39)
	Unknown	23 (59)	16 (41)
	Asian	14 (74)	5 (26)
	American Indian or Alaskan Native	9 (82)	2 (18)
	Native Hawaiian/Pacific Island	5 (71)	2 (29)
Total		1487 (52)	1356 (48)

Odds of Success in First-Year Corequisite English Gateway Courses as a Function of Number of Meetings

A binary logistic regression analysis was performed to answer this research question. The number of meetings between students and their advisors served as the predictor and success in first-year English gateway courses served as the criterion. In the analysis, success was coded as 1 and lack of success was coded as 0, with the 0-category serving as the referent group.

The classification table indicated that 57.4% of students were correctly classified as successful or unsuccessful, which is more than 50% by chance alone. The omnibus model

showed that number of meetings was a significant predictor of success in first-year corequisite English gateway courses, χ^2 (2, N = 2,055) = 34.28, p < .001. The covariate-adjusted odds ratio (CAOR) revealed that students who met with their advisors more often were 1.22 times more likely to succeed than those who met less frequently. Although small, the effect size (CAOR) indicates a benefit of meeting more versus less with advisors regarding first-year corequisite English gateway courses. Cohen (1988) provided the following interpretive guidelines for the effect size, CAOR: 1.10-1.99 as small; 2.00-4.99 as medium; and greater than or equal to 5.0 as large.

Table 9

Logistic Regression Results for First-Year Corequisite English Gateway Courses Regarding Number of Meetings with Advisors

Predictor	*B* (S.E.)	Wald (*d.f.*)	*p*	CAOR	$CI_{95\%}$ [a]
Number of Meetings	0.198 (0.047)	17.92 (1)	< .001*	1.22	1.11, 1.34

[a] 95% confidence interval of the covariate adjusted odds-ratio.

Key. B = unstandardized regression coefficient; S.E. = standard error of the unstandardized regression coefficient; d.f. = degrees of freedom; CAOR = Covariate-Adjusted Odds-Ratio; * p < 0.05.

N = 2,055

Odds of Success in First-Year Corequisite Math Gateway Courses as a Function of Number of Meetings

Another binary logistic regression analysis was performed to answer this research question. The number of meetings between students and their advisors served as the predictor and success in first-year corequisite mathematics gateway courses served as the criterion. In the

analysis, success was coded as 1 and lack of success was coded as 0, with the 0-category serving as the referent group.

The classification table indicated that 52.3% of students were correctly classified as successful or unsuccessful, which is more than 50% by chance alone. The omnibus model showed that number of meetings was a significant predictor of success in first-year corequisite mathematics gateway courses, χ^2 (2, N = 2,843) = 39.65, p < .001. The CAOR revealed that students who met with their advisors more often were 1.22 times more likely to succeed than those who met less frequently. As with first-year corequisite English gateway courses, the effect was small, but it indicates a benefit of meeting more versus less with advisors regarding first-year corequisite mathematics gateway courses.

Table 10

Logistic Regression Results for First-Year Corequisite Math Gateway Courses Regarding Number of Meetings with Advisors

Predictor	*B* (S.E.)	Wald (*d.f.*)	*p*	CAOR	$CI_{95\%}$ [a]
Number of Meetings	0.197 (0.042)	22.28 (1)	< .001*	1.22	1.12, 1.32

[a] 95% confidence interval of the covariate adjusted odds-ratio.

Key. B = unstandardized regression coefficient; S.E. = standard error of the unstandardized regression coefficient; d.f. = degrees of freedom; CAOR = Covariate-Adjusted Odds-Ratio; * p < 0.05.

N = 2,843

Odds of Success in First-Year Corequisite English Gateway Courses as a Function of Length of Meetings

In this binary logistic regression model, the length of meetings (expressed in minutes) served as the predictor, with the outcome remaining successful in first-year corequisite English

gateway courses. Results revealed that length of time was not a significant predictor of success in first-year corequisite English gateway courses, χ^2 (2, N = 2,055) = 3.06, p = .068, CAOR = 1.00. This suggests that the length of meetings neither benefitted nor detracted from success in first-year corequisite English gateway courses.

Odds of Success in First-Year Corequisite Math Gateway Courses as a Function of Length of Meetings

In this binary logistic regression model, the length of meetings (expressed in minutes) served as the predictor, with the outcome remaining successful in first-year corequisite mathematics gateway courses. Results revealed that length of time was not a significant predictor of success in first-year corequisite mathematics gateway courses, χ^2 (2, N = 2,843) = 2.89, p = .221, CAOR = 1.00. As with first-year corequisite English gateway courses, this suggests that the length of meetings neither benefitted nor detracted from success in first-year corequisite mathematics gateway courses.

Odds of Success in First-Year Corequisite English Gateway Courses as a Function of Period in which Students Met with Their Advisor

A binary logistic regression analysis was performed to answer this research question. The timeframe in which students met with their advisors (pre-registration, coded as 0; during the typical registration period, coded as 1; and late registration, coded as 2) served as the predictor and success in first-year corequisite English gateway courses served as the criterion. In the analysis, success was coded as 1 and lack of success was coded as 0, with the 0-category serving as the referent group.

The classification table indicated that 57.9% of students were correctly classified as successful or unsuccessful, which is more than 50% by chance alone. The omnibus model

showed that number of meetings was a significant predictor of success in first-year corequisite English gateway courses, χ^2 (2, N = 2,055) = 35.58, p < .001. The CAOR revealed that students who met with their advisors during late registration were 3.12 times more likely to be *un*successful than students who met with their advisors during pre-registration. Additionally, students who met with their advisors during the typical registration period were 1.63 times more likely to be *un*successful compared to students who met with their advisors during pre-registration; conversely, students who met with their advisors during the typical registration period were 2.20 times more likely to be successful in first-year corequisite English gateway courses compared to students who met with their advisors during late registration. These results clearly indicate that the earlier students meet with their advisors regarding registration the more likely they will succeed in first-year corequisite English gateway courses, with meetings during late registration significantly negatively impacting student success.

Table 11

Logistic Regression Results for First-Year Corequisite English Gateway Courses Regarding Timeframe in which Students Met with Their Advisor

Predictor	*B* (S.E.)	Wald (*d.f.*)	*p*	CAOR	$CI_{95\%}$ [a]
Pre-registration, Typical Registration	2.96 (0.197)	25.04 (1)	< .001*	1.63	1.23, 2.03
Pre-registration, Late Registration	3.24 (0.188)	27.01 (1)	< .001*	3.12	2.88, 3.36
Typical Registration, Late Registration	2.86 (0.230)	24.39 (1)	< .001*	2.20	1.83, 2.57

[a] 95% confidence interval of the covariate adjusted odds-ratio.

Note. The group on the left is the referent group in each comparison.

Key. B = unstandardized regression coefficient; S.E. = standard error of the unstandardized regression coefficient; d.f. = degrees of freedom; CAOR = Covariate-Adjusted Odds-Ratio; * p < 0.05.

N = 2,055

Odds of Success in First-Year Corequisite Math Gateway Courses as a Function of Period in which Students Met with Their Advisor

Another binary logistic regression analysis was performed to answer this research question. The timeframe in which students met with their advisors (pre-registration, coded as 0; during the typical registration period, coded as 1; and late registration, coded as 2) served as the predictor and success in first-year corequisite mathematics gateway courses served as the criterion. In the analysis, success was coded as 1 and lack of success was coded as 0, with the 0-category serving as the referent group.

The classification table indicated that 61.2% of students were correctly classified as successful or unsuccessful, which is more than 50% by chance alone. The omnibus model showed that number of meetings was a significant predictor of success in first-year corequisite mathematics gateway courses, χ^2 (2, *N* = 2,843) = 31.11, *p* < .001. The CAOR revealed that students who met with their advisors during late registration were 3.88 times more likely to be *un*successful than students who met with their advisors during pre-registration. Additionally, students who met with their advisors during the typical registration period were 1.72 times more likely to be *un*successful compared to students who met with their advisors during pre-registration; conversely, students who met with their advisors during the typical registration period were 2.39 times more likely to be successful in first-year corequisite mathematics gateway courses compared to students who met with their advisors during late registration. As with first-year corequisite English gateway courses, these results clearly indicate that the earlier students meet with their advisors regarding registration the more likely they will succeed in first-

year corequisite mathematics gateway courses, with meetings during late registration significantly negatively impacting student success.

Table 12

Logistic Regression Results for First-Year Corequisite Math Gateway Courses Regarding Timeframe in which Students Met with Their Advisor

Predictor	*B* (S.E.)	Wald (*d.f.*)	*p*	CAOR	$CI_{95\%}$ [a]
Pre-registration, Typical Registration	2.01 (0.211)	25.46 (1)	< .001*	1.72	1.35, 2.09
Pre-registration, Late Registration	3.59 (0.192)	29.63 (1)	< .001*	3.88	3.45, 4.31
Typical Registration, Late Registration	2.23 (0.229)	25.51 (1)	< .001*	2.39	1.78, 2.99

[a] 95% confidence interval of the covariate adjusted odds-ratio.

Note. The group on the left is the referent group in each comparison.

Key. B = unstandardized regression coefficient; S.E. = standard error of the unstandardized regression coefficient; d.f. = degrees of freedom; CAOR = Covariate-Adjusted Odds-Ratio; * $p < 0.05$.

N = 2,843

Chapter Summary

In summary, this chapter presented the findings of this study. First, the descriptive statistics for students enrolled in first-year corequisite English and mathematics gateway courses were presented. These include data points of students' ages, sex, and ethnicity when they initially enrolled in the courses. Lastly, results from a series of binary logistic regression analyses were presented for first-year corequisite English and mathematics gateway courses. The results of this study answered the research question: To what extent do the frequency of sessions, the length of time per session, and the first instance in which engagements occur within the semester between

students and professional academic advisors predict students' course outcomes (successful; unsuccessful) in first-year corequisite gateway courses?

CHAPTER 5

DISCUSSION

This chapter serves as an overview of the study, encompassing key components such as the problem statement, the study's purpose, the research question, and the research findings. The insights assembled in Chapter 4 will help guide the ensuing discussion surrounding the research question in this chapter. Subsequently, the chapter will delve into the practical implications of the study's findings and offer recommendations for prospective research endeavors. As a concluding note, this chapter will wrap up with a comprehensive summary of the study, featuring an impact statement and a proposed plan for dissemination.

Introduction

Academic advising and support structures within higher education can profoundly impact college students' success, academic achievements, persistence, and graduation rates, a point emphasized by Hanover Research (2014). The critical role of academic advising in fostering academic excellence is also highlighted by the CCA (2016), especially within the context of the corequisite learning support model. Without academic advising, the effectiveness of other academic support mechanisms is at risk. Additional research, exemplified by Smith and Allen (2014), characterizes academic advising as a unique service facilitating meaningful personal interactions between students and academic affairs representatives. This distinctive nature of academic advising influences student retention through its impact on social interactions, students' commitment to the institution, and overall satisfaction levels. Educational leaders acknowledge that academic advising is a widely utilized support system, assisting students in navigating college life's complex academic and social terrain to bolster student success, as Iatrellis et al. (2017) noted.

Despite its acknowledged importance, academic advising has not been immune to criticism. Much of the existing research primarily revolves around assessing student satisfaction with the advising process rather than identifying the factors that predict student academic success, as pointed out by Campbell and Nutt (2008). Shifting the focus toward identifying these predictors could significantly enhance the quality of academic advising practices and illuminate how these practices impact students' academic achievements (Campbell & Nutt, 2008; Habley & McClanahan, 2004; Young-Jones et al., 2013). Montag et al. (2012) further stressed the necessity of evaluating and improving academic advising practices. In agreement, Habley et al. (2012) emphasized that "There is ample room for scholarly exploration into the effectiveness and outcomes of academic advising efforts" (p. 291), an idea also echoed by He and Hutson (2016). This research gap has prompted scholars to investigate student success more effectively, particularly within interpersonal connections between students and academic advisors, as emphasized by Strayhorn (2015). Tinto (2017) took this idea further, urging higher education administrators to scrutinize student persistence and academic success through their interactions and engagement with the campus community.

To assist in closing the research gap, this study was conducted to identify predictor variables contributing to the successful completion of first-year corequisite gateway courses. It considers the nature of students' engagement with professional academic advisors within the centralized advising model, utilizing Astin's Input-Environment-Outcome (I-E-O) model as the theoretical framework (Astin & Antonio, 2012). In this study, the *Input* was students' academic placement into corequisite learning support courses. The *Environment* encompassed factors such as the frequency and duration of meetings between students and professional academic advisors, and the timing of these engagements within the semester. Whether a student passed or failed a

first-year corequisite English or mathematics gateway course was the *Outcome*. It is crucial to emphasize that the research did not identify certain confounding variables that might have influenced whether a student passed or failed a first-year corequisite English or mathematics gateway course. For example, these unexamined factors include student self-advisement, the utilization of academic tutoring services, the student's level of academic preparedness, and classroom dynamics.

Problem Statement

An increasing number of high school graduates are entering college with academic inadequacies, often struggling in their initial gateway courses. This struggle to pass these foundational courses has resulted in an early disruption of many students' pursuit of higher education. Recognizing the need for student performance improvement during their first year, educational leaders have initiated a shift in perspective. Accordingly, numerous postsecondary institutions have embraced the corequisite learning support model and specialized academic advising approaches that target specific students. The corequisite learning support and centralized advising models have become increasingly effective in facilitating early academic accomplishments, subsequently enhancing student retention and degree attainment prospects; however, predictors related to student academic success at EGSC have not been adequately identified.

Within this context, educational leaders at EGSC have leveraged the expertise of professional academic advisors to bolster students' academic progress within these foundational first-year corequisite gateway courses. However, despite establishing this centralized advisement approach, there has been a notable absence of empirical research to evaluate how this model has influenced students' academic success in their first-year corequisite gateway courses. This

research aimed to contribute to the existing body of knowledge by pinpointing environmental factors that can predict student academic achievement within the corequisite learning support model. Identifying these predictors can empower institutions to enhance their academic support structures, ultimately leading to improved student academic success of those attempting coursework within corequisite gateway courses.

Research Question

The overarching research question of this bivariate correlational quantitative study was: To what extent do the frequency of sessions, the length of time per session, and the first instance in which engagements occur within the semester between students and professional academic advisors predict students' course outcomes (successful; unsuccessful) in first-year corequisite gateway courses?

Methodology and Findings Overview

This study used de-identified archival data of students enrolled in first-year corequisite English and mathematics gateway courses at EGSC between the Fall of 2018 and Spring of 2022. Data included: the term description of when the student attempted a first-year corequisite gateway course, the gateway course attempted by the student subject code, the gateway course attempted by the student subject number, students' first-year corequisite gateway course final grade code (e.g., A, B, C, D, F, W, I), the frequency of student meetings with professional academic advisors measured by single units, (e.g., 1, 2, 3), the length of time of the meeting(s) measure in minute units, the date (e.g., mm/dd/yyyy) of the first instance in which a student and professional academic advisor engaged, age, binary gender, and ethnicity/race. Not all data were used in the logistic regression, but only those variables of interest to answer the research question. The participants who attempted first-year ENGL 1101 in a corequisite learning support

model for the first time between the Fall 2018 and Spring 2022 semesters were 2,055 students. The participants who initially attempted first-year MATH 1001, MATH 1101, or MATH 1111 in a corequisite learning support model for the first time between Fall 2018 and Spring 2022 semesters were 2,843 students.

These data were utilized within the confines of the theoretical framework, applying it to Astin's I-E-O model (Astin & Antonio, 2012). A series of logistic regression analyses of the data identified two statistically significant predictors of student academic success in corequisite English gateway courses: (1) the frequency of sessions and (2) the first instance in which an engagement occurred within the semester between a student and a professional academic advisor. Similarly, a series of logistic regression analyses of the data identified two statistically significant predictors of student academic success in corequisite mathematics gateway courses: (1) the frequency of sessions and (2) the first instance in which an engagement occurred within the semester between a student and professional academic advisor. The logistic regression analyses of the data determined that the length of meeting between a student and professional academic advisor was insignificant as a predictor of student success in first-year corequisite English and mathematics gateway courses.

Research Question Discussion

This study examined predictor variables and their relationship with student academic success, specifically their successful completion of first-year corequisite English and mathematics gateway courses. It considered how students' interactions with professional academic advisors within the centralized advising model influenced this context. Astin's I-E-O model was employed as the theoretical framework to guide this research, and the findings will be situated within the literature review presented in Chapter 2. It is important to note that this

section will not discuss student inputs because the primary focus of this study was not on how student inputs predict academic success. Instead, the study concentrated on investigating how academic success is predicted by the environmental factors students interact with. The subsequent sections will cover the results for each of these environmental predictors.

Environment

Astin's model incorporates the college environment, including experiences during college, and its connection to student outcomes such as retention, persistence, and graduation (Astin, 1984). In this study, the researcher examined specific environmental factors, including the frequency and duration of meetings between students and professional academic advisors and the timing of students' initial engagements during the semester. When students interact with professional academic advisors, two potential outcomes emerge: 1) an increased likelihood of successfully completing their course(s), or 2) a decreased likelihood of course success. Applying Astin's model presupposes student engagement with academic advising is a predictor for enhancing success in first-year corequisite gateway courses. Moreover, the model facilitates an individual examination of each variable's connection to improving success in these gateway courses. The study's findings indicated that the more often and earlier a student engages with a professional academic advisor, the greater the likelihood of their success in first-year corequisite English and mathematics gateway courses. The duration of these meetings did not influence the level of success a student achieved in their courses.

Frequency of Meetings with Academic Advisors

The study's results found that the frequency of student meetings with a professional academic advisor significantly predicted student academic success in both first-year corequisite English and mathematics gateway courses. To elaborate, when students actively participated in

academic advisor meetings, their likelihood of passing first-year corequisite English and mathematics gateway courses increased. To illustrate, if all other factors remained constant except for a student's engagement with a professional academic advisor, the student's odds of completing first-year corequisite English and mathematics gateway courses would be 1.2 times higher. The findings align with previous research, illustrating that the regularity of a student's interactions with an academic advisor is linked to an increased likelihood of academic success, whether it be in terms of course success rates, higher GPAs, persistence, or retention (CCCSE, 2014, 2018; Chiteng Kit, 2014; Swecker et al., 2013; Williamson, 2014). Swecker et al. (2013) discovered, in their study on retention, that for each instance of a student meeting with their academic advisor, their chances of retention increased by 13%. In CCCSE's 2014 study, it was determined that students enrolled in developmental courses who engaged with academic advisors were 1.3 times more likely to successfully complete these courses than peers who did not utilize academic advising services (CCCSE, 2014). Moreover, if academically challenged students were proactively contacted by academic advisors and attended meetings, their chances of completing developmental courses increased by a factor of 1.7 (CCCSE, 2014). CCCSE's subsequent research in 2018 revealed that students who had more than two interactions with academic advisors demonstrated a higher average of overcoming academic challenges than those who met with advisors once or twice (CCCSE, 2018). Chiteng Kot (2014) found that students who expressed interest in and utilized centralized academic advising saw a significant increase of 31.4 percentage points in their first-term GPA and a 25.1 percentage point increase in their first-year GPA. Williamson et al. (2014) observed that students who met with an academic advisor once had a success rate of 70%, as opposed to 30% for those who did not attend academic advising sessions. Additionally, those who engaged in academic advising sessions twice showed an 85%

persistence rate from the fall semester to the spring semester, compared to 32% for students who did not attend such sessions. Moreover, the analysis indicated that students who attended two academic advising meetings achieved a higher passing rate (grades: A, B, or C) of 76%, in contrast to those students who did not attend academic advising sessions, who achieved a passing rate of 21.5% within the same grade range. In the fall semester, 79% of students who attended two advising sessions achieved a GPA of 2.0 or higher, compared to only 24% of students who did not engage in academic advising sessions (Williamson et al., 2014). These studies collectively suggest, along with this study's findings, that as the frequency of advisor meetings increases, so does the probability of a student experiencing academic success.

Additional research findings support the outcomes of this study, indicating that students who actively participate in meetings with academic advisors tend to attain academic success (Bahr, 2008; Khalil & Williamson, 2014; Ryan, 2013; Vander Schee, 2007; Van et al., 2015; Van et al., 2016). However, it is worth noting that the results of this study do not align with Allen et al.'s (2008) research. Allen et al. (2008) observed a small negative correlation, suggesting that student academic success slightly decreased as the frequency of academic advising sessions increased. Nevertheless, institutional administrators and professional academic advisors should establish and implement strategies to encourage students to engage with academic advisors more frequently.

Length of Meeting with Academic Advisors

The findings of this study revealed that the duration of a student's engagement with a professional academic advisor had no discernible positive or negative impact on the success of students attempting first-year corequisite English and mathematics gateway courses. Nevertheless, when examining students who sought academic advising while attempting these

courses, the results mirrored those of CCCSE (2018). Specifically, more students engaged with professional academic advisors for durations falling within the 16 to 30-minute range compared to other time intervals.

Table 13

Length of Meetings for Students Attempting Corequisite English Gateway Courses

Length of Meetings	Number of Students (%)
15 or fewer minutes	230 (19.95)
16-30 minutes	584 (50.65)
More than 30 minutes	339 (29.40)
Total	1,153 (100)

Table 14

Length of Meetings for Students Attempting Corequisite Mathematics Gateway Courses

Length of Meetings	Number of Students (%)
15 or fewer minutes	314 (19.97)
16-30 minutes	827 (52.61)
More than 30 minutes	431 (27.42)
Total	1,572 (100)

First-time Engagement with Academic Advisors

The first time an engagement occurred between a student and a professional academic advisor during the semester in which the student was attempting first-year corequisite English and mathematics gateway courses was the strongest predictor of academic success in first-year corequisite English and mathematics gateway courses. Thus, students who consulted their advisors during late registration were 3.12 times more prone to experiencing an outcome of unsuccessful in first-year corequisite English gateway courses compared to students who met with their advisors during pre-registration. Furthermore, students who engaged with advisors

during the standard registration period faced a 1.63 times higher likelihood of encountering challenges in first-year corequisite English gateway courses than students who sought advising during pre-registration. Conversely, students who sought guidance during the typical registration period were 2.20 times more likely to succeed in their first-year corequisite English gateway courses than those who delayed their advising sessions until late registration. These findings unmistakably emphasize the significance of early advisor meetings about registration, with late registration meetings significantly and adversely impacting student success.

Furthermore, students who consulted their advisors during late registration were 3.88 times more likely to be unsuccessful in first-year corequisite mathematics gateway courses than students who met with their advisors during pre-registration. Furthermore, students who sought advisor guidance during the standard registration period had a 1.72 times higher likelihood of encountering difficulties than those who engaged with advisors during pre-registration. Contrariwise, students who met with their advisors during the typical registration period were 2.39 times more likely to succeed in their first-year corequisite mathematics gateway courses than those who delayed their advising sessions until late registration. Much like the findings for first-year corequisite English gateway courses, these results strongly underscore the importance of early advisor meetings in the context of registration, with late registration meetings significantly and detrimentally impacting student success in first-year corequisite mathematics gateway courses.

This study's findings are consistent with those of Garing (1993), who notes that timing is pivotal in enabling meaningful interactions between students and academic advisors and a student's likelihood of success. At the same time, there is a lack of specific research pinpointing the ideal timing for academic advisor-student engagement during a semester to maximize the

likelihood of student academic success. These pivotal moments often occur pre-registration, at the point of registration, and late registration (between semesters). Garing (1993) also suggested that initiating contact with an academic advisor at an earlier stage facilitates more productive discussions that promote decision-making and clarity. However, it becomes particularly crucial to engage with students during late registration. During this phase, students often disengage and isolate themselves, significantly diminishing their chances of academic success. It is recommended for institutional administrations and professional academic advisors to develop and implement strategies that actively promote earlier student engagement within the semester with professional academic advisors.

Practical Implications

Building upon the previous discussion concerning Astin's I-E-O model, it becomes evident that there are practical implications for institutional administrators and professional academic advisors at the institution under study. Within the framework of Astin's I-E-O model, these changes can potentially enhance the influence of environmental factors on the student academic success of those who attempt first-year corequisite English and mathematics gateway courses. Once more, it is crucial to emphasize that this study did not analyze student inputs of Astin's I-E-O model. The principal emphasis of this study was not on how student inputs forecast student academic success but on how environmental factors serve as predictors of student academic success. These implications extend to institutional administrators and professional academic advisors. The subsequent section will delve into the specific implications for these two groups.

Implications for Institutional Administrators

The findings of this study accentuate the need for institutional leaders to conduct a thorough examination of the academic advising model and practices in place on their campuses. This study has demonstrated that students who actively engage with professional academic advisors are more likely to succeed in first-year, credit-bearing English and mathematics gateway-type courses than their counterparts who do not engage with the advisors. These results align with prior studies that emphasized the importance of the frequency of student-advisor interactions (CCCSE, 2014; Swecker et al., 2013). Additionally, this study highlights that the timing of the initial meeting between a student and a professional academic advisor significantly impacts a student's likelihood of success in these crucial courses.

In light of these findings, institutions should consider implementing a centralized academic advising model for all first-time, first-year students. This model would involve a dedicated team of professional academic advisors guiding students attempting first-year, credit-bearing English and mathematics gateway coursework. Their role would encompass nurturing a sense of purpose among students, encouraging them to make informed choices, fostering productive academic mindsets, providing guidance through program maps to complete first-year gateway courses successfully, and accumulating 30 credit hours by the end of the first year.

These advisors would also play a pivotal role in helping students navigate the college environment and address academic challenges. By extending these effective advising practices to the first-time, first-year student population, institutions can aim to enhance the likelihood of academic success among first-year students. This, in turn, can improve overall enrollment, boost student retention rates, and increase the number of students earning degrees.

Furthermore, institutional leaders should consider implementing advising initiatives that seamlessly integrate professional academic advisors into various facets of campus operations.

This strategic move aims to enhance students' access to professional academic guidance, fostering more frequent and early interactions throughout the semester. Potential areas for consideration encompass the Office of Admissions, residential living, the classroom, and virtual rooms. By deploying advisors in these diverse areas, students can readily access professional academic support as a valuable campus resource, thus expanding opportunities and bolstering enrollment-related outcomes.

Lastly, the institution should explore improvements to its internal assessment processes, which are pivotal in maintaining regional accreditation and ensuring effective academic advising services to the student body. Strengthening these assessment mechanisms will provide solid evidence to inform the continued refinement, adaptation, or potential abandonment of existing academic advising models or practices designed to impact students' outcomes in first-year gateway courses positively.

Implications for Professional Academic Advisors

The study's findings underscore the necessity for professional academic advisors to reevaluate and potentially adapt their current approaches to student engagement. These interactions' timing is paramount, as emphasized in this research. This alignment with Garing's (1993) insights highlights the enduring significance of timing within the academic advising context. Garing's assertion that early engagement leads to more fruitful discussions and sound decision-making remains valid. The late registration period also emerges as a critical juncture when students are vulnerable to disengagement and should be a focal point for advising interventions.

Consequently, academic advising practices should be reassessed with a strong emphasis on early engagement, particularly before the commencement of the registration process.

Meetings between students and professional academic advisors before registration opens have significantly increased the likelihood of student success in first-year, credit-bearing English and mathematics gateway courses. In contrast, late registration meetings significantly elevate the risk of academic challenges and potential student attrition. Thus, academic advisors must proactively develop strategies to promote early student-advisor engagement. This could involve targeted communication campaigns, classroom visits early in the semester to highlight the importance of academic advising, launching early appointment initiatives, and implementing intrusive and proactive approaches to engage students on campus. Retaining a personalized approach within these strategies is crucial, recognizing that students may have unique needs at different stages of the semester. Therefore, academic advising approaches should remain adaptable to individual student circumstances and requirements.

Furthermore, while this study primarily examined the timing factor during the registration period, it is essential to recognize that academic advising should extend well beyond registration and the conclusion of the semester. Continuous support and guidance throughout the semester and beyond can be instrumental in helping students navigate challenges and achieve academic progress.

In summary, this study highlights the pivotal role of early engagement with professional academic advisors in enhancing student success, particularly in gateway-type courses. Academic institutions should prioritize and facilitate these early interactions to support their students' academic accomplishments.

Suggestions for Future Research

The current study exclusively examined environmental factors as predictors of academic success in corequisite English and mathematics gateway courses. However, the findings from

this research suggest avenues for future investigation. For instance, a study could be undertaken to explore the academic success of first-year students who received guidance from faculty academic advisors while undertaking first-year English and mathematics gateway courses. This adjustment offers a two-fold advantage. Firstly, it would enable a comparison to ascertain which academic advising model is more effective in fostering student academic success in first-year, credit-bearing gateway courses. Secondly, it would provide insights into how much students utilize faculty advisors. The current study's results indicated that students enrolled in corequisite English and mathematics gateway courses engaged with professional academic advisors provided by the institution. Hence, it would be intriguing to determine whether this finding is specific to students enrolled in these particular first-year corequisite gateway courses or if it extends to a broader student population.

Additionally, it is suggested to conduct future research on the intricate details of professional academic advisors and students' engagements, precisely the context of their discussions. The research would explore whether specific discussion topics between academic advisors and students predict student academic success in first-year corequisite English and mathematics gateway courses. Much of the literature suggests that students' discussion topics are imperative to student engagement and success. Moreover, students seek to discuss their academic progress, interests, passions, careers, and future aspirations with their academics. According to Donaldson et al. (2016) and Pargett (2011), the more students discussed personal and school-related topics such as academic goals, academic support services, academic/graduation plans, commitments outside of school, career interests, and regional employment opportunities, the more likely the student positively develop, and experience student academic success that leads

them toward graduation. Therefore, a qualitative and quantitative study should be conducted on academic advisors and student conversations during engagements.

Finally, there is a need for future research to investigate the impact of academic advising on students' academic achievements in first-year corequisite gateway courses. Given the presence of unaccounted confounding variables in this study, it would be advantageous to explore a Case-Control Study design, comparing two distinct groups within a single population. One group would be comprised of individuals who have received academic advising (case), and another group would be comprised of those not receiving any exposure to academic advising (control). This study would aim to determine the likelihood of encountering a risk factor or exposure in individuals to this academic environment.

Limitations, Delimitation, and Assumptions

The study had several limitations that should be taken into consideration. Firstly, it is important to note that the results of this study are specific to a single institution, limiting future study's generalizability. While these results contribute to the broader body of literature on academic advising and academic support services, the existing literature often relies on subjective evidence rather than concrete quantitative data. Additionally, each institution may have unique academic advising policies and practices. This uniqueness makes replicating a population study for a specific group of students in first-year corequisite gateway courses across different institutions challenging. Therefore, the generalizability of this study's findings is confined to the context of EGSC. Within EGSC, these results have the potential to influence decision-making processes. This impact is particularly relevant in enhancing the self-assessment process and contributing to the institution's regional accreditation. Many decisions have historically been based on anecdotal evidence. However, with this study providing concrete

quantitative data, it has the potential to better inform decision-making regarding the continuation, modification, or abandonment of academic advising practices aimed at improving students' course outcomes in first-year corequisite gateway courses.

Regarding delimitations, the researcher exercised control over several aspects of the research process. Firstly, the population was specifically selected to include only participants who attempted a first-year corequisite English gateway course (ENGL 1101) and a first-year corequisite mathematics gateway course (MATH 1001, MATH 1101, and MATH 1111) for the first time. Additionally, the study exclusively involved students assigned as advisees to professional academic advisors between the Fall 2018 and Spring 2022 semesters at EGSC while attempting first-year corequisite English and mathematics gateway courses. Moreover, the researcher simplified data collection by collapsing the grade distribution into two categories: "successful" and "unsuccessful." Similarly, the first instance in which engagements occurred within the semester between students and professional academic advisors was also collapsed into data categories, aiming to streamline data analysis.

Finally, as previously mentioned, it's crucial to emphasize that there may have been additional unexamined factors influencing the results in the research. For instance, the classroom dynamics for students taking the first-year corequisite MATH 1111 gateway course could have differed from those in the first-year corequisite MATH 1101 or MATH 1001 gateway courses. This means that the three courses might have had distinct learning environments, potentially influenced by factors such as faculty teaching methods, the use of advanced technology in classrooms versus traditional setups, or even variations in classroom ambiance like lighting or odor. These potential differences in classroom dynamics could have played a role in students

attempting the first-year MATH 1111 course achieving higher success rates compared to those attempting MATH 1101 and MATH 1001.

Conclusion

The growing influx of underprepared students into college has put immense pressure on higher education leaders to enhance student retention, persistence, and degree attainment. To tackle these challenges, educational leaders have identified a key area for improvement: enhancing the completion rates of first-year students in first-year gateway courses. These gateway courses, found at the outset of postsecondary education, have historically shown success rates of 30% or lower, negatively impacting students' motivation, retention, academic progress, and degree attainment.

Educational leaders have implemented two primary strategies to boost completion rates in these first-year gateway courses: the corequisite learning support model and increased investment in professional academic advisors who specialize in assisting specific student types. Research indicates that the corequisite learning support model has led to higher success rates and improved retention for first-year students tackling first-year English and mathematics gateway courses. Similarly, studies show that students who engage with academic advisors experience better course outcomes, increased success rates, especially in certain courses, and enhanced retention compared to those who do not seek such support. Moreover, academic advisor engagement has been linked to positive academic outcomes, particularly during the first semester and year of a student's academic journey.

Over the years, educational leaders at EGSC have implemented these strategies, including the centralized advising approach. However, there has been a lack of empirical research evaluating the impact of the academic advising model on the success of first-year

students attempting corequisite gateway courses. This study evaluated students' engagement with academic advisors in the centralized model and their success in first-year corequisite gateway courses. The study utilized student archival data, employing bivariate correlational statistical tests and binary logistic regressions to analyze a specific population. This population comprised students attempting first-year corequisite English and mathematics gateway courses for the first time, with professional academic advisors assigned to them. The statistical analysis aimed to determine whether the frequency, duration, and timing of initial engagements between students and academic advisors during the semester could predict the students' final course grades in these corequisite gateway courses.

The study's results underscored the significance of the frequency of meetings and the timing of initial engagements between students and academic advisors as predictors of academic success in first-year corequisite English and mathematics gateway courses. These findings align with previous research on student engagement with academic advisors. The study addressed enhancing student success in first-year gateway courses and provided valuable insights into the literature guiding higher education's academic support services and educational leaders. The study provides strategies to increase student success in first-year corequisite gateway courses and improve the retention rates of first-year students through effective academic advising.

Impact Statement

The present study reinforces the existing body of literature regarding the role of academic advising, particularly in its capacity to foster student academic success. It demonstrates, at an institutional level, that both the frequency and the timing of meetings between students and professional academic advisors indicate students' academic achievements in corequisite English and mathematics gateway courses. Moreover, this study has solidified the importance of ongoing

efforts to facilitate and enrich students' interactions with vital campus resources, thereby affording them the chance to excel academically. Achieving this objective will require sustained collaborative efforts across all campus facets, encompassing student and academic affairs.

Reciprocity and Dissemination of Findings

The results of this research will be disseminated to EGSC administrators and professional staff. A concise executive summary will be provided to the institution. Furthermore, the researcher intends to seek publication of the findings in an academic journal such as the *Georgia Journal of College Student Affairs*. When the opportunity arises, the researcher will also present the study's findings at state, regional, and national conferences. Moreover, the research outcomes will be accessible through the Georgia Southern University library.

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