THE ASSOCIATION OF FREQUENCY OF UTILIZING STUDENT SERVICES WITH STUDENT SUCCESS AT A COMMUNITY COLLEGE

by

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ABSTRACT

ZACHARY N. KENDRA-DILL. The association of frequency of utilizing student services with student success at a community college. (Under the direction of DR. ALAN MABE)

As colleges work to meet performance standards, staff have been placed in key service areas to help students be successful. With the majority of the seven million community college students attending part-time, needing developmental education, and not graduating on time, it is vital that students take advantage of services such as academic advising, financial aid advising, tutoring, career counseling, student organizations, disability services, and military/veteran's services (American Association of Community Colleges, 2019a; McClenny, 2016; Tippett & Kahn, 2018a). Students who utilize some of these services have been retained and had higher grade point averages (GPA) than students who did not use these services (Bremer et al., 2013; Drake, 2011; Habley et al., 2010; Hatch & Garcia, 2017; McClenney & Dare, 2013; Nakajima et al., 2012; Smith & Allen, 2014). By making use of the provided services, students were more successful, but the frequency of visits to these services has not been analyzed in-depth.

Using data from one institution's Community College Survey of Student Engagement (CCSSE), this study set out to determine if there was an association between the frequency of use of a service and the student's GPA or intent to return to that college for future semesters. The research questions that guided this study ask if there is a relationship between the frequency of service utilization and student success. By using an analysis of variance to examine the data, it was determined that the reported frequency of using financial aid advising showed a statistically significant difference in the student's GPA. The research did not find any statistically significant differences in a student's GPA for the use of multiple services nor a statistically significant difference in a student's intent to return based on the use of services. Based on this study,

community colleges will want to determine the individual services offered by financial aid advising and how to best adapt a financial aid advising program to assist those students who are visiting more often and not seeing academic success.

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Chapter 1: Introduction

Colleges work to identify and assist students who are at risk of not successfully completing courses and/or not persisting. Over 40% of students who started in 2013, whether full- or part-time, graduated from the original community college or another college in six years (Shapiro et al., 2019). Staff intervene to connect those students to resources on campus. Faculty and staff issue notifications based on a student's poor performance or lack of performance in the classroom, and regarding other personal issues that may prove detrimental to the success of a student at the college (Tampke, 2013). As more colleges connect students to resources on campus, administrators should understand how multiple visits to these resources relate to a student's success. The institution must start by first understanding who their college serves, what impacts experiences and personal characteristics have on a student's academic journey.

Community colleges meet the needs of their local communities through providing curricula leading to credentials (certificates, diplomas, or degrees) based on students' intention of transferring, need for developmental education, plan to join the work force, desire for continuing education, and connection to the community (Cohen et al., 2014). The amount of attention community colleges give to each of these curricular functions depends on the needs of the community at that given time. To support the demands of transfer students, developmental education, and occupational curriculum, colleges provide services on campus to assist students in navigating their way to success. Services, such as advising, student life, financial aid advising, and tutoring are meant to connect students to professional staff at the college who will support the student to improve their chances of success.

Serving over seven million students, community colleges enroll 63% as part-time students, meaning they take fewer than 12 semester credit hours (American Association of Community Colleges [AACC], 2019a). These students struggle for a variety of reasons, 72% of community college students wait at least two years after high school graduation to enroll (Tippett & Kahn, 2018a), 68% of students need at least one developmental course (McClenny, 2016), and most did not meet ACT educational benchmarks (Tippett & Kahn, 2018a). In addition to academic related struggles, students struggle with basic needs, such as housing and food insecurities (Goldrick-Rab et al., 2018). These factors encompass some of the reasons that students may not do as well academically in college and not persist or graduate.

Community colleges struggle to retain their students and have lower completion rates than their four-year counterparts (Tippett & Kahn, 2018a). Within North Carolina, Tippet and Kahn (2018a) found that students enrolling directly out of high school were retained in the community colleges at a rate of 55% compared to 80% at four-year institutions. In retaining students, institutions can help their students work to meet their goals and graduate in a timely fashion. Like retention rates, completion rates are lower at two-year institutions (National Center for Educational Statistics [NCES], 2018b). Only 32.8% of first-time full-time community college students graduated at the 150%-time frame in contrast to 54.9% of four-year students who complete within the 150%-time frame (Tippett & Kahn, 2018a).

Services on campus found at both two- and four-year institutions, such as advising, financial aid counseling, disability services, tutoring, and student life, can help students remain enrolled and increase the student's GPA (Drake, 2011; Habley et al.,

2010; Hatch & Garcia, 2017; McClenney & Dare, 2013; Nakajima et al., 2012; Smith & Allen, 2014). Advisors help students understand higher education by connecting their career and academic goals, which leads to those students acquiring higher self-confidence and higher completion rates (Drake, 2011; McClenney & Dare, 2013). Students who utilized tutoring services return at a higher rate the following semester and have a higher GPA than those students who did not use tutoring (Bremer et al., 2013). The same results associated with tutoring occurred in students who also received financial aid, they had higher GPAs and were more likely to return (Bremer et al., 2013). Therefore, students who take advantage of these services experience more success in meeting their educational goals, but the relationship of frequency of use (i.e., how often students use a service) and cross utilization of services (i.e., whether a student uses multiple services) with student success have not been explored in depth.

Purpose

This study will examine students' frequency of utilization of selected student services on a community college campus. Studies have determined that a relationship exists between the services on a college campus and the students' success (Bahr, 2008; Bremer et al., 2013; Fong et al., 2018; Strapp & Farr, 2010), but the lack of information about the frequency of use hinders the full understanding of a student's potential of not being successful or retained, also known as an at-risk status. Understanding how the frequency of utilization of a student service, specifically advising, tutoring, financial aid advising, disability services, and student life, is related to the student's GPA and intent to return for future semesters, the college will be able to more accurately identify students who are at-risk and intervene appropriately.

Research Questions

The following research questions will guide this study:

1. What is the relationship between the frequency of visits to a given student service and a student's GPA?
2. What is the relationship between the frequency of visits to a given student service and a student's intent to return?
3. What is the relationship between utilizing a combination of services and a student's GPA?
4. What is the relationship between utilizing a combination of services and student's intent to return?

Theoretical Overview

The guiding theory for this study is based on Astin's (1984) theory of student involvement and Tinto's (1975) interactionalist theory of student departure. Utilizing both theories, a holistic picture of a student's relationship with a college can be formed. "Student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1984, p. 36). Within the educational setting students are using a vast amount of physical and psychological energy. The energy students devote to bettering themselves through education, is expended inside and outside of the classroom. The student must take time away from their regular schedule to visit with advisors, tutors, and financial aid representatives. The time spent with these individuals at the college can directly impact how the student does in the classroom. Therefore, the frequency of use of a service on campus leads to involvement, as defined by Astin (1984). Involvement could be associated with the student's success and whether

they continue on an educational path to obtain a degree and/or transfer to a four-year institution.

Tinto (1975) describes many factors and behaviors that impact a student's ability to remain at an institution of higher education. Some of the individual factors that impact a student include their demographics, past educational experiences, and commitment to their goals. Even with the institution providing services, it is the student's responsibility to identify within themselves what assistance they need and seek it out. As faculty and staff work with their students, the interactions can impact the student's intent to remain at the institution. Tinto (1975) states that meeting with faculty and staff can be a positive influence that increases the likelihood that a student will remain in college. Consequently, we must then look at all of the interactions a student has across the different service to determine if the positive influence is consistent with the combination of interactions.

Overview of Research Methodology

To explore the topics of frequency of use and cross utilization of services, a quantitative study will be conducted. The quantitative study was selected as a student's GPA and intent to return are ratio and nominal variables. This study will review self-reported data from an annual survey given to select course sections within the community college. The Community College Survey of Student Engagement (CCSSE) is a survey of community college students that "assess institutional practices and student behaviors that are correlated highly with student learning and student retention" (Community College Survey of Student Engagement [CCSSE], 2019b). The survey was developed by the Center for Community College Student Engagement (CCCSE) at the University of Texas at Austin (CCSSE, 2019b). This is similar to the four-year institutions' survey called the

National Survey of Student Engagement (NSSE). CCSSE is broken down into sections that assess what the student does with their time, their experiences in the classroom, relationships developed with faculty, staff, and other students, challenges they face, and how they are supported by their institution (CCSSE, 2019c). These sections can be related to the five benchmarks that the CCSSE calculates to help institutions compare themselves to other colleges (CCSSE, 2019c). The benchmarks are active and collaborative learning, student effort, academic challenge, student-faculty interactions, and support for learners (CCSSE, 2019c). This study will focus on the section that collects information about services the student utilized at the college, including the frequency of use. This utilization is directly linked to the CCSSE benchmarks surrounding student effort and support for learners (CCSSE, 2019c).

Two-year institutions can opt to participate in the CCSSE by becoming a member of the Center for Community College Student Engagement (CCSSE, 2019c). CCSSE is a national survey given to over 340,000 students from more than 230 institutions (CCSSE, 2019d). For the purposes of this study, a single institution was selected. The community college selected is in the southeast United States and a part of a statewide system. In the year this data was collected, over 6,000 students worked towards degrees, diplomas, certificates, and over 19,000 students were enrolled in other short-term trainings at this community college. The college administered the CCSSE to several credit-bearing course sections at all of its campuses. Instructors administered the survey during the final weeks of the spring 2019 semester. The results were collected by the office of institutional research and turned over to CCCSE for compiling.

To understand the relationship between the service(s), and GPA or intent to

return, logistic regressions and ANOVA analyses will be conducted. Table 1 depicts the variables, analysis, and hypothesis for each research question.

Table 1

Summary of Statistical Analyses

Research Question	Independent Variable	Dependent Variable	Statistical Test	Hypothesis
What is the relationship between the frequency of visits to a given student service and a student's GPA?	Frequency of use of: Academic Advising; Career Counseling; Tutoring Services; Skills Labs; Child Care Services; Financial Aid Advising; Computer Labs; Student Life; Transfer Advising; Library Services; Disability Services; Military/Veteran's Services	GPA	ANOVA	Null: There is no difference in the GPA of the student based on the frequency of visits to a service. Alternate: There is a difference in the GPA of the student based on the frequency of visits to a service.
What is the relationship between the frequency of visits to a given student service and a student's intent to return?	Frequency of use of: Academic Advising; Career Counseling; Tutoring Services; Skills Labs; Child Care Services; Financial Aid Advising; Computer Labs; Student Life; Transfer Advising; Library Services; Disability Services; Military/Veteran's Services	Intent to return	Logistic Regression	Null: There is no association in the intent to return of the student based on the frequency of visits to a service. Alternate: There is an association in the intent to return of the student based on the frequency of visits to a service.

What is the relationship between utilizing a combination of services and a student's GPA?	Combination of Service Use	GPA	ANOVA	Null: There is no difference in the GPA of the student based on the use of multiple service. Alternate: There is a difference in the GPA of the student based on the use of multiple service.
What is the relationship between utilizing a combination of services and student's intent to return?	Combination of Service Use	Intent to return	Logistic Regression	Null: There is no association in the intent to return of the student based on the use of multiple service. Alternate: There is an association in the intent to return of the student based on the use of multiple service.

Significance of the Study

Community colleges are working to identify students who are at-risk of doing poorly in class and not returning to the institution to complete their degree or credential (Tampke, 2013). Many colleges already have a system in place to identify those students who are struggling in class and connect them to many of the resources on campus, known as early alerts. As part of the early alert process, students are encouraged or mandated to utilize services to help make them more successful in the classroom. Dwyer et al. (2019) found that students were more likely to persist if early alerts were issued at the college. Colleges need to be aware of students who are utilizing services as a sign that they are potentially struggling in the classroom and are at-risk of not returning to complete their educational journey, this could potentially be an early alert in order to provide better

support to that student.

With the knowledge of the association that could exist between the frequency of utilization of services on campus, colleges will be able to develop other methods of intervention. Utilization of a service could dramatically impact a student's success at the college. Current research suggests student who under-utilize a service, or not use a service, have lower GPAs and are less likely to be retained (Bremer et al., 2013; Smith & Allen, 2014; Vick et al., 2015). As community colleges work to increase their retention and completion rates it is important that all service utilization factors are dealt with effectively.

Delimitations

Due to the types of services offered and the layout of the CCSSE, a single institution was selected for review. This is both a delimitation, but also a control factor. Services between institutions often vary, as does the organizational structure institutions. An example of this is that at the selected institution, "career counseling" and "academic advising/planning" are done by the same office, while at other institutions those services are located in different offices and employ different staff members.

The CCSSE asks students to identify services that were used and how often they were used. Due to the organizational structure, this study will combine those services depending on which office oversees that specific service. Advising will contain services noted as academic advising/planning, career counseling, transfer advising/planning; tutoring services will include peer or other tutoring and skill labs; financial aid will encompass financial aid advising, services for active military and veterans, and childcare financial assistance.

Assumptions

The CCSSE is a self-reported survey of the student experience. Due to the self-reported nature, the assumption is that the students who are completing the survey are being truthful about their GPA and intention to return.

Since the survey does not contain explanations of services, it is assumed that students understand what each service represents. The college uses verbiage that is consistent across the campus, therefore, it is assumed that students know what each service refers to.

Definitions

Throughout this study, terms will be used to describe specific areas of the college and student experience. These definitions are found in previous literature and within the survey tool being used.

Academic Advising

The process where a student meets with a professional advisor or faculty advisor to discuss their career and academic goals. Some advising activities include career assessments/exploration, academic and transfer planning, course selection, and registration (Donladson et al., 2016; Drake, 2011; McClenny & Dare, 2013).

Developmental Education Status

A student who indicated on the CCSSE that they were taking developmental or remedial reading, writing, or math course, is considered taking developmental education. Student who said they were not taking and do not plan to take a developmental or remedial reading, writing, or math course is considered non-developmental (CCSSE, 2019d).

Disability Services

The service that helps students gain accessibility due to cognitive or physical impairments (Fichten, et al., 2014; Mamiseishvili & Koch, 2012).

Financial Aid Advising

This service is utilized by students completing the Free Application for Federal Student Aid (FAFSA), needing to better understand their award, receiving military or veteran benefits, or needing additional financial help to remain at the college (Bremer et al., 2013; DiTommaso, 2016).

First-Generation

A student whose parent (mother or father) has not attended any college (CCSSE, 2019d).

Persistence

Rate at which student re-enrolls at any institution of higher education (Tippett & Khan, 2018b).

Student Life

Student organizations and the events that they host for students at the institution (Culp, 2005; Strapp & Farr, 2010).

Tutoring Services

In-person or online interactions to discuss material related to a specific course. Activities can include course material review, writing assistance, learning management system support, and e-text support (CCSSE, 2019b; Bruck & Bruck, 2018; Bremer et al., 2013).

Retention

Rate at which students re-enroll at the same institution of higher education (Tippett & Khan, 2018b).

Summary

Community colleges are working to increase their retention and completion rates; therefore, it is important to look at all activities students engage in order to be successful. Research has demonstrated the impact of utilizing services across campus on a student's GPA and retention (Bahr, 2008; Bremer et al., 2013; Fong et al., 2018; Strapp & Farr, 2010). However, the actual use of the service, specifically the frequency of use or the combination of services utilized, has not been well explored.

Moving into this study, chapter two will review the current literature. The literature review discusses community college in the United States, CCSSE, student success measures, and student resources. This overview specifically focuses on previous research as it relates to services and the potential association with a student's GPA and their intention to return for future semesters. Chapter three covers the methodology of the study. Utilizing the CCSSE from a suburban community college, data gathered from over 500 students, and the planned analysis will be explained. The fourth chapter of this paper will analyze the data gathered as outlined in chapter three to answer the research questions. Both logistic regressions and analysis of variance (ANOVA) will be conducted. The ANOVAs will show that the frequency of use of financial aid advising is associated with a student's GPA, but no other service utilization is associated with the student's GPA. Through the logistic regression, it will be determined that there is not sufficient evidence to support the claim that service utilization is associated with a student's intent to return. The final chapter will be an in-depth discussion around the

findings, connection to previous research, implications for practice, and future studies.

Chapter 2: Literature Review

In the United States, community colleges serve over seven million credit-seeking students who come to college with a variety of different experiences, characteristics, education levels, and support (American Association of Community Colleges [AACC], 2019a; McClenney, 2016; National Center for Educational Statistics [NCES], 2018b; Tippett & Kahn, 2018a). The Center for Community College Student Engagement, whose mission is to "provide important information about effective practices in the community colleges," (CCSSE, 2019a, para. 1) works with colleges to administer a survey to returning students. This survey, the Community College Survey of Student Engagement (CCSSE), helps identify areas of improvement for the college, as it collects data on student demographics, experiences both in and out of the classroom, utilization of services, communication efforts, and success measures (Community College Survey of Student Engagement [CCSSE], 2017). As a part of their survey responses, students note the numbers of times they used each campus service, their intent to return, and grade point average (GPA) (CCSSE, 2017). With the information gathered for the CCSSE survey, this study will work to identify relationships between the utilization of services and student success.

To meet students where they are and help them understand how their academic goals and career goals align, community colleges need to support their students both in and out of the classroom. Through a review of the literature, services that impact a student's success can be identified. This chapter will review research on community colleges, community college students, the CCSSE, student success measures, and impacts of campus resources. The frame of the literature review is outlined in table 2.

Table 2

Community College Student Success Literature Review Summary

Theme	Subtheme	Literature
Community Colleges in the U.S.	Community College Mission	Ayers, 2015; Cohen et al., 2014; Lucas, 1994; NCES, 2018b; Thelin, 2004
	Student Demographics	AACC, 2019a; McClenney, 2016; Tippett & Kahn, 2018a
	Challenges for Students	Broton et al., 2016; Dachelet & Goldrick-Rab, 2015; Goldrick-Rab et al., 2018; McClenney, 2016; Tippett & Kahn, 2018a
CCSSE	Theory Behind CCSSE	Astin, 1984, 1985; CCSSE, 2019b; Chickering & Gamson, 1987; McCelnney, 2007; NIE, 1984; Pace, 1984
	Studies Utilizing CCSSE	CCCSE, 2017, CCSSE 2019b, 2019c; Dudley et al., 2015; Hurley, 2009; McClenney, 2016; McClenney et al., 2012; Price & Tovar, 2014; Reynolds, 2007; Saenz et al, 2011
Student Success Measures	Retention	Craig & Ward, 2008; Fike & Fike, 2008; Habley et al., 2010; Hatch & Garcia, 2017; McClenney & Waiwaiole, 2005; Shugart & Romano, 2008
	Persistence	Fong et al., 2018; Hu, 2011; Nakajima, Dembo, & Mossler, 2012; Sanchez & Smith, 2017; Tippett & Kahn, 2018b
	Student Completion	NCES, 2018b; McClenney, 2016; Shapero et al., 2019
Student Resources	Advising	Bahr, 2008; Donaldson et al., 2016; Drake, 2011; Hatch & Garcia, 2017; Jenkins, Brown, Fink, Lahr, & Yanagiura, 2018; Jenkins Brown, Lahr, Fink, & Ganga, 2018; McClenney & Dare, 2013; Smith & Allen, 2014;
	Tutoring	Bremer et al., 2013; Cooper, 2010; Hendriksen et al., 2005; Kostecki & Bers, 2008; Vick et al., 2015
	Financial Aid	AACC, 2019a; Bremer et al., 2013; Fike & Fike, 2008; Lumina Foundation, 2018; Sanchez & Smith, 2017
	Disability Services	Fichten, et al., 2014; Fong et al., 2018; Mamiseishvili & Koch, 2012
	Student Life	Astin, 1999; Culp, 2005; Strapp & Farr, 2010

Community Colleges in the United States

"Students cannot succeed unless institutions know who they are, what they know, what they need, where they want to go, and where they are in their educational process" (Culp. 2005, p. 36). As students are the driving force of any community college, the college must set their mission and vision to reflect how they identify and what impacts they would like to make on their community. By doing this, they are defining their characteristics, helping faculty and staff find their identity as an institution (Bolman & Deal, 2013). The mission then impacts the students who are obtaining their education at that community college no matter what the student is bringing with them.

Community College Mission

Community colleges have grown steadily since the early 1900s where 85 institutions primarily served five states (Lucas, 1994). Now there are over 1,000 institutions in the United States serving over nine and a half million credit and non-credit seeking students (Cohen et al., 2014; NCES, 2018b). Community colleges are open access institutions, which refers to the admission process, as there are limited requirements and selectivity does not exist (Cohen et al., 2014; Thelin, 2004). The functions of community colleges are designed to meet students where they are academically and personally. Cohen et al. (2014) outline five curricular functions of the community college: academic transfer, career technical education, continuing education, developmental education, and community service. The missions of community colleges have evolved over the decades to be more inclusive of the types of credentials awarded, the growth individuals obtain, the format in which education is distributed, and the way in which they communicate (Ayers, 2015). Due to open access, student demographics

represent diverse backgrounds, different level of preparedness, and various experiences.

Student demographics

The American Association of Community Colleges (AACC, 2019a) published demographic information from their members schools, and stated that in 2017, seven million students enrolled for curriculum level courses at 1,051 different community colleges. The AACC also reported that 63% of students went part-time, which means less than 12 credit hours a semester. Community college students have diverse backgrounds: 56% are women; 46% are White, 25% Hispanic, 13% Black, 6% Asian/Pacific Islander; 28 is the average age (AACC, 2019a). Many students are in need of financial assistance to help pay for the education, 59% of students in 2016-2017 received some sort of financial aid (AACC, 2019a).

Community college students are typically not coming directly from high school (AACC, 2019a; Tippett & Kahn, 2018a). With a delay such as this, some skills can be lost in their time off or their skills never fully developed in their K-12 education. McClenney (2016) reported that 86% of community college students said that they were academically prepared for college, but the majority of students needed remedial courses. Since remedial courses can add additional semesters to a student's academic plan, it can be a challenge for first-time, full-time students to graduate in a timely manner, as only 29% of these students graduate with an associate degree in six years, while 43% are no longer pursuing a degree (McClenney, 2016).

Challenges for Students

Student preparedness. Students come to community college with a variety of experiences and education levels. Tippett and Kahn (2018a) use the terms on-time and

delayed enrollment when looking at admission to community colleges, which means a student enrolling in college immediately following high school graduation or the amount of time between high school graduation and the enrollment at a community college. Tippett and Kahn (2018a) found that in North Carolina 39% of on-time enrollments were at community colleges, and 72% of enrollments within two years of graduating high school were at community colleges. This shows that the majority of students, who wait to enroll in college, go to a community college. As students delay enrollment into college, there could be a greater lack of preparedness for a college level education.

Developmental education is a large part of a community college's mission. These courses are designed to assist students in their preparation for their college level courses, mainly in math and English. McClenney (2016) reported that 68% of community college students needed to take at least one developmental course. This aligns with Tippett and Kahn (2018a) who looked at the ACT benchmarks (English, math, reading, and science) for students who had delayed enrollment. They found that only 6% of students who delayed their enrollment met all four of the ACT benchmarks and the majority, 69%, met none of these benchmarks. When students need to take developmental courses, their program of study is lengthened which can cause students to not graduate in a timely fashion or not graduate at all.

Basic needs of community college students. As the economy around us changes, more students are going hungry or do not have a place to live (Goldrick-Rab et al., 2018). For students to be successful, institutions must work to assist with student's food and housing insecurities. Not providing assistance in the form of financial aid dollars, food pantries, or other support services can lead to students working more (Broton et al.,

2016). Broton et al. (2016) found that providing additional funds to students lowered the likelihood that they would work by 5.88%. Even for those students who work, Goldrick-Rab et al. (2018) report that 56% of students are food insecure and 49% of students are struggling with their housing arrangement or are homeless. To address some of these concerns, some institutions have implemented the use of emergency funds, which pay for unexpected expenses (Dachelet & Goldrick-Rab, 2015). By assisting students with food and housing insecurities, institutions are helping students stay engaged at their college (Broton et al., 2016).

Community College Survey of Student Engagement

Theory behind CCSSE

"The more actively engaged students are – with college faculty and staff, with other students, with the subject matter they are studying – the more likely they are to persist in their college studies and to achieve at higher levels" (CCSSE, 2019b). The CCSSE survey was developed utilizing involvement theory published by Pace (1984), Astin (1984), National Institute of Education (NIE, 1984), and Chickering and Gamson (1987) (McClenney, 2007).

Pace (1984) studied the College Student Experiences questionnaire that was originally published in 1979. The main purpose of the questionnaire was to determine "what the students do in college, and on what conditions the college influences what they do and what they achieve" (Pace, 1984, p. 19). Pace (1984) found several predictors to specific student objectives; personal/social development was predicted by activities promoting self-awareness, acquiring intellectual skills was predicted by course activities, progress to a student's general education goals was predicted by cultural events and

writing, and finally predictors for understanding science was use of lab space. The most important factor of achievement was what the student did at the institution (Pace, 1984).

As researchers looked at what a student did at the institution, Astin (1984) used the term involvement, which means "the amount of physical and psychological energy that the student devotes to academic experience" (p. 297). The theory of student involvement encourages students to be active in their learning, prompts students to invest energy within the curriculum, and focuses administrative efforts towards student activities (Astin, 1984). Astin (1985) continued to identify student factors that impact a student's persistence at college as "full-time attendance, participation in extracurricular activities, studying hard, living on campus, and interacting frequently with other students and with faculty" (p. 37). Even though Astin's research (1984, 1985) was conducted at four-year institutions, the notions of involvement and persistence factors should also be applied at two-year colleges.

The NIE (1984) stated that "the most important [condition] for purposes of improving undergraduate education-is student involvement" (p. 17). The NIE recommended that institutions increase resources to first- and second-year student services. By "front-loading" services, an institution will help increase retention and student learning (NIE, 1984). NIE (1984) continued to recommend that institutions of higher education should offer efficient advising from student's application to their graduation. The NIE (1984) recommendations align with the principles of good practice published by Chickering and Gamson (1987). The practices specifically state that a college should encourage contacts between students and faculty, use active learning, emphasize time on task, communicate expectations, and respect diverse talents and ways

of learning (Chickering & Gamson, 1987).

Studies utilizing CCSSE

The Center for Community College Student Engagement works with colleges across the nation to collect data that informs national norms on practices within community colleges, identifies areas within student experiences that can be improved, and records college effectiveness (CCSSE, 2019b). This survey has been built and validated to show that "student engagement…is significantly related to student learning, persistence, and academic attainment" (McClenney et al., 2012, p. 2). This survey uses five benchmarks of practice to help institutions compare themselves to each other, they are: active and collaborative learning, student effort, academic challenge, student-faculty interaction, and support for learners (CCSSE, 2019c). These benchmarks and the survey itself has led the way to numerous studies to improve graduation rates, understand attendance patterns, understand student engagement, and make meaningful change at community colleges (Center for Community College Student Engagement [CCCSE], 2017; Dudley et al., 2015; Hurley, 2009; McClenney et al., 2012; McClenney, 2016; Price & Tovar, 2014; Reynolds, 2007; Saenz et al., 2011).

Dudley et al. (2015) based their study on the CCSSE benchmarks. They conducted focus group interviews and built their questions on the benchmarks (Dudley et al., 2015). Dudley et al. (2015) found that students were aware of many of the services that are offered to help them academically, but many choose not to use these services due to schedule issues, motivation, and intimidation/embarrassment. The students in the focus group noted that they would have liked to have more information in order to become more familiar with financial aid (Dudley et al., 2015). In the classroom Dudley et al.

(2015) found that the typical student did the minimum to pass a class, even though they were not clear what passing a class meant. Students have higher expectations of their faculty then they do of themselves. This includes faculty being timely with grades, assignment feedback, and responses to student emails (Dudley et al., 2015).

Like Dudley et al. (2015), Hurley (2009) used the CCSSE benchmarks to determine if the college should create clusters within large community colleges. Hurley (2009) used data from CCSSE and Integrated Postsecondary Data System (IPEDS) of 48 community colleges. Through multivariate analysis, Hurley (2009) determined that clustering, or grouping, large community colleges along the lines of the CCSSE benchmarks was effective. By creating these clusters, Hurley (2009) states that this "affords institutions opportunities to select peer institutions based upon evaluation and assessment processes supportive of student academic achievement, student persistence, and student goal attainment" (p. 108).

Reynolds (2007) used CCSSE data to make changes at Santa Fe Community College. After the college gathered their CCSSE data, a committee was formed to look over the data and recommend changes throughout the institution (Reynolds, 2007). CCSSE data was integrated into discussions on a daily basis (Reynolds, 2007). Through these discussions and the data, some ideas about their students were reinforced and it also challenged other beliefs they had (Reynolds, 2007). The data demonstrated that 63% of students had no knowledge or very little interactions with their advisors and that there was a need for increased tutoring (Reynolds, 2007). One recommendation that was made was the implementation of a case management model for their advising center, as well as mandatory advising (Reynolds, 2007).

The CCSSE is a tool that can help institutions understand benchmarks, compare themselves to similar institutions, or create change within (Dudley et al., 2005; Hurley, 2009; Reynolds, 2007). The survey can also give institutions an in-depth look at student and institutional outcomes (CCCSE, 2017; McClenney et al., 2012; McClenney, 2016; Price & Tovar, 2014; Saenz et al., 2011). Through an analysis of CCSSE data, Price and Tovar (2014) found that there was a relationship between CCSSE benchmarks and the graduation rates of men and women, as well as for White, non-Hispanics, Hispanics and American Indian/Alaskan Natives. Price and Tovar (2014) interpreted this to mean "that students who attend community college that provide a supportive environment through academic advising; non-academic supports (e.g., counseling); and financial supports are more engaged-and more engagement…is predictive of higher institutional graduation rates" (p. 779). CCCSE (2017) found that graduation rates of students who attended full-time were higher than those attending part-time, 50% and 23%. Overall, CCCSE (2017) found that full-time attendance led to more engaged students on the CCSSE benchmarks.

As this study utilizes CCSSE for data collection, the remainder of this review will utilize the survey as a guide for success measures and student resources. The survey item #28 and #29 asks the student if they will return to the college and what their grade point average is (CCSSE, 2017). The survey lists several resources in which the student can identify how many times they used specific services.

Student Success Measures

Student success measures are dependent on the organization through which reports are filed. The National Center for Education Statistics (NCES) has institutions report on institutional characteristics, enrollment, graduation, admissions, and financial

aid (NCES, 2019). Another agency that collects data is the American Association of Community Colleges, through the Voluntary Framework of Accountability (VFA). Institutions report to the VFA enrollment in developmental courses, credits earned, retention, and completion (AACC, 2019b). The difference in NCES graduation rates and the VFA's completion rates are based on time frames and if the student has transferred to a four-year institution (AACC, 2019b; NCES, 2019). The CCSSE survey asks students to respond to individual success measure such as their intent to return, their GPA, and their use of services (CCSSE, 2017). With the different reporting structures and criteria within NCES and VFA, this study will focus on data that was collected by the CCSSE.

Throughout the literature, there is a lack of uniformity in the use of the terms retention and persistence. Even in the definition provided by NCES (2018a) combines the two ideas of retention and persistence:

> A measure of the rate at which students persist in their educational program at an institution, expressed as a percentage... For all other institutions this is the percentage of first-time degree/certificate-seeking students from the previous fall who either re-enrolled or successfully completed their program by the current fall (definition of retention).

Therefore, we will use Tippett and Kahn's (2018b) definitions of retention and persistence:

> Institutions retain, Retention rates capture the share of students who continue enrollment within the same higher education institution or system. Individuals persist. Persistence rates capture the share of students who continue enrollment at any higher education institution in the following year, even if this is a difference

institution or system than the one at which the student initially enrolled. (p. 3)

The last metric that will be discussed is completion. This metric is defined by a student completing a certificate, diploma, or degree.

Retention

Community colleges work diligently to ensure that their students are being retained, and they do this through assigned duties, course work, and programming efforts (Fike & Fike, 2008; Habley et al., 2010; Hatch & Garcia, 2017; McClenney & Waiwaiole, 2005; Shugart & Romano, 2008). Many community colleges appoint a person on campus to oversee retention efforts, but 40.5% of campus do not have such a person in place (Habley et al., 2010). McClenney and Wiawaiole (2005) stated that it is not up to one person at the college to improve retention, rather it should be a combined effort of everyone at the institution. Administrators should set institutional goals, which give a college direction and know that they are meeting benchmarks set for themselves, but 53% of community colleges state that they do not have a stated retention goal (Habley et al., 2010). Retention goals fold into the practices of the institutions, which includes programs and services offered (McClenney & Waiwaiole, 2005; Shugart & Romano, 2008).

Requiring students to enroll in specific courses, participate in learning communities, meet with their advisor, and make use of tutoring are practices that can increase a college's retention rates (Fike & Fike, 2008; McClenney & Waiwaiole, 2005; Shugart & Romano, 2008). At Valencia Community College a three-tier model was introduced to help retain students (Shugart & Romano, 2008). This model included new technology that allowed a more robust academic planning and advising practices, with both student and staff facing portals to keep students on the path to completion (Shugart

& Romano, 2008). The model reinvented how they deliver services to their students (Shugart & Romano, 2008). Through this model, fall to fall retention grew more than 26% (Shugart & Romano, 2008). Other resources that contributed to retention include financial aid and the TRIO program (Fike & Fike, 2008). Not only are models and services such as these important to student retention, but the courses that students enroll in also impact their retention (Fike & Fike, 2008). Fike and Fike (2008) found that students who took developmental reading and developmental math were more likely to be retained than those students who did not take any developmental courses.

Student demographics can also play an important role in retention rates at community colleges. Hatch and Garcia (2017) reported that White students have stronger intentions of returning for future semesters then Asian, Asian American, Pacific Islander, and Black students in their first couple weeks of college. Craig and Ward (2008) did not find that race had a significant relationship with retention, they did find that the time between high school and college did impact a student's retention. Student goals should be considered when talking about retention. Hatch and Garcia (2017) found that many community college students are likely to be working towards an immediate goal of transferring classes to another institution or working to gain knowledge to join the workforce. Furthermore, Hatch and Garcia (2017), noted that working with advisors on an academic plan raise the odds of a student returning.

Persistence

Since persistence rates are based on the individual student continuing their educational journey, persistence rates will be higher than retention rates by the nature of their definition (Tippett & Kahn, 2018b). Sanchez and Smith (2017) studied non-U.S.

citizens at Hispanic serving institutions (HSI) and found that federal student aid status, total financial aid, and grade point averages were predictors of a student's persistence. Students who were eligible for federal aid were 6.4 times more likely to persist then non-eligible students (Sanchez & Smith, 2017). Nakajima et al. (2012) found GPA and financial aid to be predictors for all students at all types of community colleges. Other predictors of persistence include a student's enrollment status, purpose for being in college, and engagement levels (Fong et al., 2018; Hu, 2011; Tippett & Kahn, 2018b). Those individual students who are able to persist are the students who complete their journey with a certificate, diploma, or degree.

Student Completion

One of the standard measures of success at any institution of higher learning is degree completion. Community colleges typical award three types of credentials, associate degrees, long-term certificates (diplomas), and short-term certificates. The associate degree is designed to be completed in a two-year period, but the majority of students are unable to complete the degree within that window. NCES (2018b) reported that in 2016, 32.8% of first-time, full-time students graduated with an associate degree within three years. Since 2002 this rate has fluctuated a couple of percentage points but has remained between 30% and 34% (NCES, 2018b). To compare these community college rates to their four-year counterparts, student graduating within six years is 54.9% (NCES, 2018b). Even though we are looking at three years and six year, they are comparable since they are both 150% of the time it takes to get the typical degree at that institution. Tracking all students for completion based on their starting year, is a national practice and several studies utilize the 150% as an acceptable standard. Some researchers

have reported the graduation rate to be slightly higher than NCES's. McClenney (2016) reported graduation rates of first-time, full-time students to be 39%. Shapiro et al. (2017) stated that community college students who started in 2011 had a six-year graduation rate of 37.5%, which includes 26.5% graduating from their starting community college, 3.3% graduating from a different community college then where they started, and 7.7% starting at a community college and transferring to graduate from a four-year institution.

Student Resources

Community colleges provide a number of services to students to help them through their educational journey. These resources include advising, tutoring, financial aid, disability services, and student life (CCSSE, 2017), which all have made an impact on student success measures (Donaldson et al., 2016; Drake, 2011; Habley et al., 2010; Hatch & Garcia, 2017; McClenney & Dare, 2013; Smith & Allen, 2014). Community colleges have rated their practices making the largest contributions to retention as tutoring, developmental courses, academic advising centers, early alerts, orientation, and training for their faculty advisors (Habley, et al., 2010). The following section will review the resources noted on the CCSSE and the impacts they have on students.

Academic Advising

Academic advising at community colleges is much more then telling students what they need to take for graduation purposes, it is a key relationship for success (Donaldson et al., 2016; Drake, 2011; Smith & Allen, 2014). These relationships are important because "advisors teach students to negotiate the higher education maze, to make effective and thoughtful decision about their futures" (Drake, 2011, p. 11). Not only are students learning as their relationship develops with their advisor, but students

with solid relationships with advisors are more confident in their academic plans and complete at a higher level than students who do not have quality relationships with their advisors (McClenney & Dare, 2013; Smith & Allen, 2014). Since advising is very relational, staff should work to implement constructivist learning theories, help students make sense of their experience, and help the students plan for the future. The type of advising a staff member uses with students can impact their likelihood of returning for a future semester. Hatch and Garcia (2017) found that more intrusive advising styles led to higher odds that the student would not return for a future semester. They describe intrusive advising practices as "aid throughout the enrollment process, review of placement processes, consulting about importance of attainment and total time commitment needed, consulting about career/program fit, and likely career outcomes" (Hatch & Garcia, 2017, p. 377).

Some students find advising is more helpful than others. Students taking remedial courses benefit more from advising then students who are in their college-level courses (Bahr, 2008). This is due to the support and encouragement that these students received while talking with an advisor (Bahr, 2008). Underprepared students find advising more helpful than those students who are more prepared for college courses (Bahr, 2008).

A newer trend in the community colleges is guided pathways, which help students map out their goals (Jenkins, Brown, Fink, Lahr, & Yanagiura, 2018). To do this the advisor and student should start with the goal and work backwards to make the plan (Jenkins, Brown, Fink, Lahr, & Yanagiura, 2018). As guided pathways are being implemented, changes to student advising is taking place; for example, Jackson College has increased their advisors, lowering their student-to-advisor ratio (Jenkins, Lahr, Fink,

& Ganga, 2018). Through this process they have found that students are able to complete gateway courses at a higher rate and are obtaining more credits in the student's fall semester (Jenkins, Lahr, Fink, & Ganga, 2018).

Tutoring Services

Tutoring services can help students work through many course related issues, including understanding materials, navigating technology used within the classroom, and helping students improve their writing skills. By utilizing tutoring services students are able to complete more courses, improve their GPA, and remain enrolled (Bremer et al., 2013; Kostecki & Bers, 2008; Vick et al., 2015).

Students attending tutoring found their GPA had increased by at least 0.38 on a 4-point scale (Kostecki & Behrs, 2008). Not only did students have a better GPA, but their overall academic success was higher (Vick et al., 2015). Vick et al. (2015) went on to state that students who utilized tutoring services had higher performance levels in their developmental English and those students had a higher success rate of 10%. Specifically, students attending tutoring in their first year not only saw higher GPAs, but they were more likely to come back for additional semesters (Bremer et al., 2013). That small boost in a GPA can give confidence to a student, which can greatly impact their life. Staff working with tutoring should use either a behavioral or cognitive theory to help students succeed. Through these theories, students will be rewarded with the positive reinforcement in what they are learning, and the students will better understand how to process information. Hendriksen et al. (2005) found the GPA of students who utilized tutoring was 0.14 higher, on a 4-point scale, than those students who did not use tutoring. More students who used tutoring services received a passing grade of C- or higher

compared to their non-tutored counterparts, 75% and 71% respectively (Hendriksen et al., 2005). Tutored students had a 2% higher course completion rate then students who did not receive tutoring (Hendriksen et al., 2005). Students who went to tutoring ten or more times in the quarter had higher GPAs then those who went ten or fewer times, including those who did not visit the tutoring center at all (Cooper, 2010).

Retention was also higher in students who utilized tutoring (Cooper, 2010; Hendricksen et al., 2005). Hendricksen et al. (2005) found that student who participated in tutoring were retained at a higher rate than the institutional average retention rate. Cooper (2010) found that students who used the tutoring center ten or more times in the quarter were being retained at the college compared to students who did not use the tutoring center. As students use tutoring, they have more confidence in the class, and the majority of students attributed their passing grades to tutoring (Hendriksen et al., 2005).

Financial Aid

On average the annual tuition at public community college is $3,660 (AACC, 2019a). Even though the sticker price is around $6,000 lower than a four-year institution, still 73% of students apply for financial assistance to attend (AACC, 2019a). There are a variety of types of financial aid, including federal grants, federal loans, state aid, institutional aid, and other scholarships (AACC, 2019a). The largest part of federal aid that students receive in the community colleges is through the Pell Grant, with 34% of students receiving these funds (AACC, 2019a).

In addition to helping students pay for their college expenses, students who utilize financial aid have higher GPAs and are retained at a higher rate (Bremer et al., 2013; Fike & Fike, 2008; Sanchez & Smith, 2017). Bremer et al. (2013) found that students who

received financial aid in their first year were more likely to enroll in a third year of college. Not only did this impact the long-term enrollment, but recipients had a higher GPA and were better retained in non-developmental courses (Bremer et al., 2013). Sanchez and Smith (2017) found that non-U.S. citizen students who were eligible for federal aid were six time more likely to persist then non-U.S. citizen students who were ineligible.

Helping students in the financial aid office will require staff to look at the practices in which they partake. This include streamlining services, working with students to fully understand their financial aid choices, and simplifying the process at the college (Lumina Foundation, 2018). To better assist students the financial aid department should create partnerships within the college. This can be done through academic programs that offer health services, automotive repair, accounting and tax assistance, and food pantries (Lumina Foundation, 2018).

Disability Services

Campuses offer disability services to those students who identify that they have a disability, either learning or physical. As with many offices on campuses, student must seek out support, uniquely with disability services students must self-identify that they have a disability as the college cannot assume they have one. In a study conducted by Mamiseishvili and Koch (2012) found that 24.7% of students with disabilities left by the end of their first year and 50.6% left by their third year. Specifically, students with diagnosed depression were not retained into their second year as often as other students presenting different disabilities. Students with a physical disability were less likely to stay past three years (Mamiseishvile & Koch, 2012). As retention leads to graduation,

students who were socially alienated were less likely to be retained (Fichten et al., 2014). Fichten et al. (2014) found predictors of student graduation include "social alienation on campus, course self-efficacy, and personal situation facilitators" (Fichten et al., 2014, p. 281). Therefore, to help reduce the number of students departing at the second and third year, disability service counselors should increase student connections on campus.

Unlike graduation, the only predictor of a student's grades was course self-efficacy (Fichten et al., 2014). Students who are adaptive, meaning that they are trying to increase their knowledge or meet reasonable goals, had higher academic performance rates than those students who had overreaching goals, low ego and were not engaged (Fong et al., 2018). One idea presented by Fichten et al. (2014) is that students with disabilities who attend their first-choice institution or program of study are more likely to have higher grades than students who do not get their first choice.

Student Life

As a campus community, community colleges must bring students together outside of the classroom to create a sense of belonging. At every campus student life looks a little different, but the concepts are the same. Student life can help students connect to other students, the institution, or the community through events and campus organizations. These experiences outside of the classroom help students through their college experience (Culp, 2005). Strapp and Farr (2010) found that students who participated in extra-curricular activities had a high academic performance. Astin (1999) stated that student involvement at the campus level can be impacted by the student's outside obligations including commuting, attending part-time, and off campus employment. Therefore, student life is important for student to achieve success, as this

keeps students on campus and connects their in-class and out-of-class experiences. Using social cognitive theory, student life staff can help students better interact with other students, staff and the college. Student leaders are able to demonstrate appropriate behaviors, or guide students in the correct direction for success.

Summary

As demonstrated by previous literature, community colleges are places for individuals to work on their academic and career goals by taking developmental courses when needed, increasing their technical skills, understanding their transferability and participating in community service (Cohen et al., 2014). To accomplish all of these tasks, a student's engagement in and out of the classroom have been shown to impact their overall success (Astin, 1984, 1985; Chickering & Gamson, 1987; NIE, 1984; Pace, 1984). To measure this engagement the CCSSE survey is distributed to community college classrooms across the country (CCSSE, 2019b). Within this survey students can identify services, such as advising, tutoring, financial aid, disability services, and student life, that they have used. Previous research has been able to tie these services with student success, like GPA, retention, and completion (Donaldson et al., 2016; Drake, 2011; Habley et al., 2010; Hatch & Garcia, 2017; McClenney & Dare, 2013; Smith & Allen, 2014). In the previous studies, the researchers rarely demonstrated that the frequency of visits were factors in a student's success. For this study we will use the services listed in CCSSE and frequency of use to determine if relationships exist between these factors and the student's success.

Chapter 3: Methodology

Community colleges serve a diverse population of students who are working to increase their knowledge to join the workforce, increase workforce mobility, or transfer to a four-year institution (Tippett & Kahn, 2018a). The American Association of Community Colleges (AACC, 2019a) reported that in the fall 2017 seven million students were taking classes for credit, of whom 56% were women, 25% Hispanic, 13% Black, 46% White, and the average age was 28. AACC (2019a) also reported that 29% were first generation students, 15% were single parents, 5% veterans, 20% had a disability, and 8% had a bachelor's degree. Due to the differences in students, colleges provide a wide range of support services to help students through their educational journey. These services include academic advising, financial aid advising, tutoring services, student life activities, and disability services.

Previous research has demonstrated some associations between student participation in services and some academic outcomes. For example, services at the community college are designed to help students stay engaged and be retained (Fike & Fike, 2008; Shugart & Romano, 2008). Academic advising creates relationships with students, where students are confident in their academic plan, resulting in higher completion rates (McClenney & Dare, 2013; Smith & Allen, 2014). Receiving financial aid led students down a path of increased grade point averages (GPA) and higher retention levels than those students who did not receive financial aid (Fike & Fike, 2008; Sanchez & Smith, 2017). Students who utilized tutoring at the community college saw an increased GPA, higher course completions, and a higher likelihood of being retained (Bremer et al., 2013; Vick et al., 2015). Individuals who participate in student life

activities are more likely to be successful then those students who do not participate in similar activities (Strapp & Farr, 2010). Finally, student utilizing disability services to receive accommodations were more likely to be retained and graduate than those students who had a disability and did not receive accommodations (Fichten et al., 2014).

With the wide variety of engagement opportunities, some students could benefit from connecting to individuals and services leading them to perform higher academically and be retained at the college. Previous studies found relationships between the utilization of a service and student outcomes, the majority of these studies focused on the use of a service, but not the frequency of use. Cooper (2010) reviewed the use of tutoring and the frequency of student use as it related to the student's success. As students utilize or fail to utilize services based on academic and social needs, are there relationships among the frequency of use and the use of multiple services and the student's success?

Research Questions and Hypotheses

1. What is the relationship between the frequency of visits to a given student service (academic advising, student life, financial aid advising, and tutoring) and a student's GPA?

   Null hypothesis: There is no difference in the GPA of the student based on the frequency of visits to a service.

   Alternate hypothesis: There is a difference in the GPA of the student based on the frequency of visits to a service.

2. What is the relationship between the frequency of visits to a given student service and a student's intent to return?

   Null hypothesis: There is no association in the intent to return of the student based on

the frequency of visits to a service.

Alternate hypothesis: There is an association in the intent to return of the student based on the frequency of visits to a service.

3. What is the relationship between utilizing a combination of services and a student's GPA?

   Null hypothesis: There is no difference in the GPA of the student based on the use of multiple service.

   Alternate hypothesis: There is a difference in the GPA of the student based on the use of multiple service.

4. What is the relationship between utilizing a combination of services and student's intent to return?

   Null hypothesis: There is no association in the intent to return of the student based on the use of multiple service.

   Alternate hypothesis: There is an association in the intent to return of the student based on the use of multiple service.

Research Design

This study will use a correlational design to determine if a relationship exists between frequency of using a service(s) and student success (Mertens, 2015). This quantitative design will have multiple independent and dependent variables. Accounting for multiple variables is one of the design strengths (Mertens, 2015). Another strength is that I will be able to conduct a logistic regression and control for the other variables in the model (Huck, 2012). This design has a limitation since prediction error can occur, where the results of the analysis do not fully represent the actual relationship (Coladari &

Cobb, 2014).

Researcher's Positionality

As part of this research, it is important that my positionality is described since it acknowledges the context in which this research is conducted. For several years I have worked in higher education, specifically in housing and residence life at four-year institutions, and academic advising at community colleges. During and after graduating with my master's degree in education, I worked in a housing and residence life office. I oversaw residential communities in specific areas including honors and engineering students. Many of the students I worked with needed additional help and were referred to other student success offices to gain additional assistance. This assistance has continued in my current position as an academic advisor. In this, role I work with many students at a community college as they need assistance identifying career options, developing academic plans, responding to early alert notifications, and assisting with post-graduation planning. Even though I have worked with many students at the community college, I have never attended a community college. As a student, I utilized services that are similar to those under investigation in this study. From my experiences, I have found that those individuals who are not as confident in their career choices or academic ability are utilizing services more than those students who are more confident. In my current interactions or relational stance, I work with a sub-set of students who take advantage of the campus resources which may not be reflective of the entire student population. This research will either solidify my current notions or enlighten my understanding of the relationships that do exist between service utilization and student success.

The role that I will play in conducting this research will consist of analysis only.

The CCSSE was administered by faculty in accordance with the CCSSE guidelines. I had no role in the data collection or entry. I requested the data from the college's Office of Institutional Effectiveness and Research. Through this process, approval was granted by the data owners. Once the data was received, I combined specific variables to meet the requirements of data analysis based on the research questions.

Protection of Human Subjects

IRB approvals were received from the institution overseeing this study and special permission was given by the community college where the data was collected. The CCSSE does give students the option to provide their student ID number, therefore all ID numbers were removed prior to my receiving of the data so no individual student would be identified in the data set or in my study. The researcher had no contact with students as a part of the data collection.

Sampling

The sample for this study will come from a community college in North Carolina. Serving multiple counties in North Carolina, this suburban community college has 6,355 students, 64% women, 12% Hispanic, 18% Black, and 60% White, and the average age was 28. Based on the 2018-2023 strategic plan, the college's goals are to (a) increase the educational attainment in the counties it serves, (b) prepare students to become responsible and productive citizens, (c) be innovative, and (d) be a catalyst for change. Demonstrating that student success is important, the college has created objectives, that can be related back to relevant research in the field.

- Employ technology and resources that support learning.
- Ensure timely student completion.

- Provide holistic advising, resources and support services to optimize the student experience.
- Increase student participation in co-curricular and extra-curricular activities to produce well-rounded leaders.
- Develop world-class faculty and staff.
- Strive for continuous improvement by challenging the status quo.

(From college website)

For this study a stratified random sample was used. The survey was given to students in randomly selected course sections at the college based on the time the class started (CCSSE, 2020). The students within each section were expected to fill out the survey. There was a total of 63 course types where the survey was administered, over half being a second semester course as demonstrated in table 3 by the prerequisites needed to take the course; appendix A has the full list of courses and prerequisites. A stratified sample is one where subgroups are selected due to difference in sizes and studied, in this case start time of the classes (Mertens, 2015). The sample's demographic information is laid out in table 4.

Data Collection

This study will utilize data that was collected for the Spring 2019 CCSSE. Instructors were asked to administer the CCSSE survey to their students and return the surveys to the college CCSSE administrator. During the survey, the instructors read the instructions to the students, collected the completed surveys, and returned them to the Office of Institutional Effectiveness and Research. The collected information was then sent to The Center for Community College Student Engagement (CCCSE). Once the

responses were recorded the data was returned to the college.

Table 3

Prerequisite Totals for Surveyed Courses

Course Type Surveyed	Number Needing No Prerequisite	Number Needing Developmental Prerequisite	Number Needing Curriculum Prerequisite	Total Number of Courses Surveyed
Career & Technical Education	18		12	30
General Education	16	7	9	32
Support Course	1			1

Note. Career and Technical Education courses are those that are not designated to transfer under North Carolina's Comprehensive Articulation Agreement.

Table 4

Demographics of CCSSE Participants Compared to the Institution

Variable	Sample *(N=532)*		Institution *(N=6,355)*	
	Frequency	Percent	Frequency	Percent
Gender				
Man	247	46%	2288	36%
Woman	253	48%	4067	64%
Other	5	1%		0%
Race/Ethnicity				
Asian	11	2%	127	2%
Black or African American	76	14%	1144	18%
Hispanic or Latino	76	14%	763	12%
Pacific Islander	1	0%		0%
White	306	58%	3813	60%
Other	30	6%	508	8%
Age Group				
Under 24	384	72%	4321	68%
25 and over	133	25%	2034	32%

Instrument

Founded in 2001, CCSSE collaborated with its four-year counterpart survey, the

National Survey of Student Engagement (NSSE) (CCSSE, 2019b). The survey was designed to guide two-year institution on best practices for engagement in learning (CCSSE, 2019b). The survey, which has gone through several redesign since 2001, is based on research from the National Institute of Education's (NIE, 1984) *Involvement in Learning*, Chickering & Gamson's (1987) *Seven principles of good practice in undergraduate education,* Pascarella & Terenzini's (1991) *How college affects students*, and Tinto's (1993) *Leaving college* (CCCSE, 2019).

For the purposes of this study, questions 12, 28, and 29 will be used, along with demographic information. A sample survey is located in appendix B. Question 12 of the CCSSE asks students to indicate the number of times they visited the given services (Never, 1, 2-4, or 5 or more times). Due to the generic nature of the survey some of these services at the selected college are combined or not offered. Details will be provided in the limitations section of this chapter. The services that are on the CCSSE survey include:

- Academic advising/planning
- Career counseling
- Job placement assistance
- Peer or other tutoring
- Skills labs (writing, math, etc.)
- Child Care
- Financial aid advising
- Computer lab
- Student organizations
- Transfer advising/planning

- Library resources and services
- Services for students with disabilities
- Services for active military and veterans

Not all services listed in the CCSSE are offered by the college and many of the services are centrally located. Table 5 outlines the services that are offered by the given office.

Table 5

Defined Office Services based on CCSSE

Office	Service based on CCSSE
Career & Academic Advising Center	Academic advising/planning Career Counseling Transfer advising/planning
Financial Aid Office	Financial aid advising Services for active military and veterans Child Care Services
Tutoring Center	Peer or other tutoring Skill labs (writing, math, etc.)
Student Life	Student Organizations
Office of Accessibility	Services for students with disabilities
Library Resource Center	Computer lab Library resources and services

Question 28 of the survey asks about the student's intent to return to the college. It asks when students will take classes again at the college. The students have the following options:

- I will accomplish my goals(s) during this academic term and will not be returning
- I have no current plan to return
- Within the next 12 months
- Uncertain

Lastly, question 29 has students indicate their grade point average at the college in letter form:

- A
- B
- C
- D or lower
- I do not have a GPA at this college

Analysis Procedures

Upon receiving the raw data, additional coding was completed for analysis purposes. The student's intent to return and GPA was re-coded, table 6 outlines the additional coding. Intent to return was recoded as persisting, not-persisting, or completing. The student's GPA was converted to the corresponding numerical value.

Table 6

Recoding of CCSSE Values

Student's CCSSE Response	Re-Coding for this Study
I will accomplish my goals(s) during this academic term and will not be returning	Completed
I have no current plan to return	Not persisting
Within the next 12 months	Persisting
Uncertain	Not persisting
A	4
B	3
C	2
D or lower	1
I do not have a GPA at this college	0

To complete the analysis of the data the software used was Statistical Package for Social Sciences (SPSS) version 26. A descriptive statistical analysis was completed to understand the data's accuracy, missing values, and outliers.

To address the two research questions on a student's intent to return, a logistic regression was used. A logistic regression identifies independent variables that have an

association with the dependent variable (Huck, 2012). In this case, the researcher will be able to state how the number of office visits influenced the student's intent to return. The odds ratio was calculated and presented to explain the difference in the groups who intended to return compared with those who did not intend to return.

The research questions around the student's GPA was addressed by using an analysis of variance (ANOVA) test. The ANOVA allows the researcher to view the means of groups, the GPA of students who visited never, one time, two to four times, and five or more times, to determine if there is a significant difference in the times a student visits and their GPA (Huck, 2012).

Validity

CCSSE was built around involvement, integration, and experiences as related to learning, persistence, and attainment (McClenney et al., 2012). The tool has been found to be valid in studies conducted by Angell (2009), Marti (2008), and McClenney et al. (2012). Angell (2009) found that the CCSSE's factors were indeed valid at the institutions. The factors Angell (2009) viewed were skill gains, service importance, school opinions, and mental activities. These four factors explained 22.5% of the spread from the average benchmarks, as they corresponded directly to the questions on the survey (Angell, 2009).

Using three phase of model development, Marti (2008) determined that the survey was reliable and valid. The three phases included a model of best fit, confirmatory factor analysis models, and a regression analysis. Through these three phases of analysis, Marti found that the survey was suitable for use in varying populations of students. The validity analysis compared the student's GPA with their reported engagement on campus. Marti

found that there was a “strong positive relationship” between GPA and engagement.

McClenney et al. (2012) conducted three studies to measure: academic success, persistence, completion, and longevity. Conducting three studies using data from the CCSSE and compared it to (1) a Florida community college, (2) the CCSSE Hispanic Student Success Consortium, and (3) institutions participating in Achieving the Dream project. Items from the CCSSE were then compared to measurable student outcomes such as GPA, completion, and graduation. They found that their results validated the CCSSE’s benchmarks. Specifically, they found positive associations between student engagement and retention (McClenney et al., 2012).

Limitations

The questions on the survey are a limitation, as the CCSSE uses generic names for services. At the studied college, multiple services are offered by the same office, as noted in the instrument section above.

With the defined services, some students might not utilize the service as intended, therefore getting that same assistance elsewhere. Some students have created relationships with their faculty members and might get advised or tutored by that faculty. Without a context of the service in the survey of where the service was received could create confusing for the student completing the survey.

The final limitation is how the data is collected. All of the surveys are self-reported data. Since students are not required to include their student identification number, the information that they report cannot be confirmed. This also means that we will not be able to collect true retention information, rather it will be a student’s intent to return. Furthermore, since this study is reviewing retention information and not

persistence, the researcher was unable to include information about a student's intent to transfer to another institution. The researcher was able to obtain college wide data on student GPA and retention information to make the appropriate comparisons.

Summary

This study seeks to determine if relationships exist between the frequency of and multiple use of a student service and the student's GPA or intent to return. The research examined if the student's success was impacted by that one office or if there were a combination of offices that contributed to success or lack of success. CCSSE data will be analyzed using multiple regressions. The results of the research will be discussed in the following chapter.

Chapter 4: Analysis of Data

This study focused on students' reported frequency of use of services and their success, either being retained or affecting their grade point average (GPA), to determine if there was an association between the two. Using SPSS 26 and student responses from one community college's 2019 Community College Survey of Student Engagement (CCSSE), statistically analyses were conducted to answer the four research questions presented earlier. This chapter will outline participant information, the procedure of each analysis, and the findings for all four research questions.

Participant Information

The CCSSE was administered in the classroom setting to those students present. This resulted in a sample of 532 students, and as previously noted in chapter three the demographics of the students were similar to that of the institution. Table 7 illustrates the sample students, how they identify, and compare to the institution's student population.

Table 7

Demographics and Subpopulations of CCSSE Participants

Variable	Sample *(N = 532)*		Institution *(N = 6,355)*	
	Frequency	Percent	Frequency	Percent
		Gender		
Man	247	46%	2,288	36%
Woman	253	48%	4,067	64%
Other	5	1%		
Did not respond	27	5%		
		Race/Ethnicity		
Asian	11	2%	127	2%
Black or African American	76	14%	1,144	18%
Hispanic or Latino	76	14%	763	12%
Pacific Islander	1	0%		0%
White	306	58%	3,813	60%
Other	30	6%	508	8%
Did not respond	32	6%		

Table 7 Continued				
Variable	Sample *(N = 532)*		Institution *(N = 6,355)*	
Age Group				
Under 24	384	72%	4,321	68%
25 and over	133	25%	2,034	32%
Did not respond	15	3%		
Participating in Development Education				
Developmental	148	28%	385	6%
Non-Developmental	367	69%	5,970	94%
Did not respond	17	3%		
Enrollment Status				
Part-Time	193	36%	4,006	63%
Full-Time	333	63%	2,349	37%
Did not respond	6	1%		
Total Terms Enrolled				
1st Term	132	25%		
2nd Term	169	32%		
3rd - 4th Term	143	27%		
5th - 6th Term	41	8%		
7th or higher Term	29	5%		
Did not respond	18	3%		
First-Generation Students				
First-Generation	178	33%	1,267	20%
Not First-Generation	354	67%	5,088	80%

Procedure Summary and Results

The below summary and results are based on each of the research questions that were posed. Based on the identified student demographics, additional analyses were conducted to determine if any interaction effects between their demographic information and utilization of services impacted the student's GPA or intent to return. These additional analyses were identified as important to the study as the literature review demonstrated the impacts of student demographics on success.

Research Question 1 - What is the relationship between the frequency of visits to a

given student service and a student's GPA?

Total Sample (N = 532). The one-way analysis of variance (ANOVA) has four assumptions that need to be met: normality, homogeneity of variance, independence of observations, and randomly selected participants. Distribution of normality was violated, as the histogram was skewed left. The other assumption that has been violated is homogeneity of variance for the frequency of transfer advising/planning variable, as assessed by the Levene's test for homogeneity of variances ($p = .046$). One-way ANOVAs were conducted for each service and found a statistically significant difference in the average GPAs for students who utilized financial aid advising, $F(3, 460) = 6.653$, $p < .001$. Table 8 contains the one-way ANOVA results for all of the services, as no other service produced a statistically significant difference in GPA. Students who never used financial aid advising ($M = 3.24$, $SD = .773$) had a higher GPA then those who used this service 1 time ($M = 3.18$, $SD = .759$), 2-4 times ($M = 2.96$, $SD = .875$), and 5 or more times ($M = 2.77$, $SD = .809$). The Tukey post-hoc analysis showed that the mean GPA decreased from never using financial aid advising compared to 2-4 times (-.282, 95% CI [-.52, -.05]) was statistically significant ($p = .011$), as well as a decrease in GPA for students who never using financial aid advising compared to 5 or more uses (-.471, 95% CI [-.79, -.15], $p = .001$) and 1 time use compared to 5 or more uses (-.409, 95% CI [-.77, -.05], $p = .018$).

The college, at which this study was conducted, has two services in which the students must meet certain criteria in order to use those services. Military/veterans services where the student must qualify for benefits through Veterans Affairs. The CCSSE does ask students if they are in the military or a veteran, so the data file was split

to review only those students who reported they were active military or a veteran. Out of the 532 student responses, 26 students identified as active-duty military or a veteran. Using the split file, the one-way ANOVA was conducted and found no statistically significant findings (p = .734) in the difference in GPA based on the reported utilization of military /veteran's services.

Similar to military/veteran's services, not all students are able to use disability services. Students who need accommodations through disability services, must provide appropriate documentation supporting their need for accommodations. There is no question on the CCSSE where students are asked to disclose if they have a disability. Due to the lack of provided information the data file cannot be split to better understand utilization of disability services. This will be further discussed in chapter five.

Based on Gender. Two-way ANOVAs were conducted to examine the effects of gender and reported service utilization on a student's GPA. The analysis for all combinations of service and gender found that there were no statistically significant interaction effects. When specifically reviewing the difference in GPA based on gender and reported service utilization, the main effect of gender was statistically significant. Since this study is not comparing the mean GPA based on the demographics alone, no further analyses were conducted for gender, nor any other demographically statistically significant variable.

Based on Race/Ethnicity. Due to the low response rate from specific race/ethnic groups, some of the groups were combined to create viable figures for data analysis. Students who identified as Asian, Pacific Islander, and other were combined into variable one group, see table 9. This coding of race and ethnicity does not match the institution's

Table 8

One-way ANOVA for Reported Service Utilization

Variable	Never			1 Time			2-4 Times			5 or More Times			*df*	*F*	*p*	η^2
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*				
Academic Advising	55	3.24	.793	92	3.14	.806	239	3.04	.852	82	3.10	.747	3, 464	1.034	.377	.01
Career Counseling	287	3.13	.828	77	3.05	.776	84	3.05	.835	20	2.95	.826	3,464	.535	.659	.00
Tutoring	294	3.13	.797	43	2.95	.815	80	3.08	.839	49	3.04	.957	3, 462	.645	.587	.00
Skills Lab	264	3.07	.861	52	3.17	.706	73	3.10	.785	71	3.13	.809	3, 459	.283	.838	.00
Child Care	441	3.11	.817	7	2.86	.690	5	3.2	.447	7	2.57	.976	3, 456	1.217	.303	.01
Financial Aid Advising	184	3.24	.773	85	3.18	.759	139	2.96	.875	56	2.77	.809	3, 460	6.653	.000	.04
Computer Lab	190	3.10	.794	47	3.00	.909	101	3.04	.786	125	3.16	.846	3, 459	.629	.597	.00
Student Organizations	360	3.08	.830	38	3.00	.870	41	3.39	.628	23	2.96	.767	3, 458	2.210	.086	.01
Transfer Advising	266	3.14	.857	60	3.03	.780	96	3.08	.749	37	2.92	.829	3, 455	.980	.402	.01
Library Services	147	3.19	.839	51	2.96	.848	116	3.03	.818	149	3.09	.800	3, 459	1.387	.246	.01
Military/Veteran's Services	9	3.22	1.093	4	3.75	.500	7	3.29	.756	6	3.17	.753	3, 22	.430	.734	.06
Disability Services	430	3.11	.820	13	2.92	.760	9	3.00	.866	13	2.62	.768	3, 461	1.775	.151	.01

Table 8

Recoded Race/Ethnicity

Race/Ethnicity		
Asian/Pacific Islander/Other	42	8%
Black or African American	76	14%
Hispanic or Latino	76	14%
White	306	58%
Did not respond	32	6%

reporting as noted in table 4 or 7. To examine the effects of race/ethnicity and reported service utilization on a student's GPA, two-way ANOVAs were conducted. These analyses resulted in no statistically significant interaction effect between race/ethnicity and reported service utilization on GPA. The two-way ANOVA did result in statistically significant main effects for race/ethnicity, and financial aid advising utilization, $F(3, 420) = 3.917$, $p = .009$, partial $\eta^2 = .027$. Post-hoc comparisons using the Tukey HSD test showed a statistically significant decrease in the mean GPA of students who indicated that they never used financial aid advising ($M = 3.26$, $SD = .771$) compared to those students who report a frequency of 2-4 times ($M = 2.96$, $SD = .879$) by .30 (95% CI [-.53, -.06], $p = .007$). The average GPA also decreased for those who never used financial aid advising compared to student using the service 5 or more times ($M = 2.75$, $SD = .806$) by .50 (95% CI [-.82, -.19], $p < .001$). There was also a statistically significant difference in students' GPA who utilized financial aid advising one time ($M = 3.15$, $SD = .756$) compared to 5 or more times ($M = 2.75$, $SD = .806$). This comparison showed the student's GPA decreased by .39 (95% CI [-.75, -.07], $p = .025$).

Based on Age. The CCSSE collected student ages in the following categories: under 18, 18-19, 20-21, 22-24, 25-29, 30-39, 40-49, 50-64, and 65 and older. To match

the demographics provided by the institution, the age categories were converted to under 24, and 25 and older. This conversion will be applied to all age groups moving forward in the study. A two-way ANOVA was conducted and found the interaction between age and use of the reported service on the student's GPA too not be statistically significant. The two-way ANOVAs found that the only main effect was age and financial aid advising utilization, $F(3, 456) = 4.281$, $p = .005$, partial $\eta^2 = .027$. The Tukey HSD analysis indicated that students who utilized financial aid advising never ($M = 3.24$, $SD = .773$) had a statistically significant higher GPA than those students who utilized the service 2-4 times ($M = 2.96$, $SD = .875$) and 5 or more times ($M = 2.77$, $SD = .809$) by .28 (95% CI [.05, .51], $p = .009$) and .47 (95% CI [.16, .78], $p = .001$), respectively. This analysis also found that students who used financial aid advising once ($M = 3.18$, $SD = .759$) had a higher GPA than those who attend five or more times by .41 (95% CI [.06, .76], $p = .015$).

Based on Developmental Education. The two-way ANOVA revealed that the interaction effect between a student's developmental education status and reported service utilization on a student's GPA had no statistical significance. The two-way ANOVA did result in the main effect of developmental education status and reported utilization of financial aid to be statistically significant on the student's GPA, $F(3, 452) = 5.003$, $p = .002$, partial $\eta^2 = .032$. The Tukey HSD analysis found the statistically significant difference was between those students reporting never ($M = 3.24$, $SD = .775$) using financial aid advising and 2-4 times ($M = 2.96$, $SD = .875$), never and 5 or more times ($M = 2.78$, $SD = .809$), and 1 time ($M = 3.19$, $SD = .756$) and 5 or more times. Students who said they never used financial aid advising had a higher GPA those who

used reported 2-4 times by .28 (95% CI [.05, .52], p = .010), and those who reported 5 or more times by .46 (95% CI [.14, .78], p = .001). Those students who reported using financial aid advising one time had a high GPA than those students reporting 5 or more uses by .41 (95% CI [.05, .77], p = .019).

Based on Enrollment Status. The two-way ANOVAs were conducted to determine if there was an interaction effect between a student's enrollment status and reported use of a service on their GPA. The analysis found the main effect of enrollment status and financial aid advising, $F(3, 452) = 8.134$, $p < .001$, partial $\eta^2 = .051$, to be statistically significant. To identify where the difference in GPA were, the Tukey HSD analysis was conducted. Similar to the previous reports on the main effects of financial aid advising, the statistically significant difference was between the students reporting using financial aid advising never (M = 3.24, SD = .777) and 2-4 times (M = 2.96, SD = .875), never and 5 or more times (M = 2.77, SD = .809), and one time (M = 3.18, SD = .751) and 5 or more times. The GPA differences that were found to be higher are compared in table 10.

Table 9

Tukey HSD for Main Effect, Two-Way ANOVA for Enrollment Status and Financial Aid Advising

Reported Use	Compared to Reported Use	Mean Difference	95% CI	
			Lower Bound	Upper Bound
Never	2-4 times	.28**	.05	.52
Never	5 or more times	.47**	.15	.79
1 time	5 or more times	.41*	.06	.77

**p<.05. **p<.01.*

Based on Total Terms Enrolled. When the two-way ANOVAs were conducted there was no statical significance in the interaction between total terms enrolled and the reported service utilization on the student's GPA. The only statically significant main

effects were found to be financial aid advising use, $F(3, 443) = 6.694$, $p < .001$, partial $\eta^2 = .043$. The Tukey HSD analysis found the statistically significant difference was between those students reporting never ($M = 3.24$, $SD = .775$) using financial aid advising and 2-4 times ($M = 2.96$, $SD = .875$), never and 5 or more times ($M = 2.77$, $SD = .809$), and 1 time ($M = 3.18$, $SD = .759$) and 5 or more times. Students who said they never used financial aid advising had a higher GPA those who used reported 2-4 times by .28 (95% CI [.05, .52], $p = .010$), and those who reported 5 or more times by .47 (95% CI [.16, .79], $p = .001$). Those students who reported using financial aid advising one time had a higher GPA than those students reporting 5 or more uses by .41 (95% CI [.05, .77], $p = .018$).

Based on First-Generation Students. As reported in all other services, the two-way ANOVA only reported statistical significance in the financial aid advising main effect, $F(3, 456) = 6.259$, $p < .001$, partial $\eta^2 = .040$. The Tukey HSD analysis was conducted and found the statistically significant differences between the students reporting never ($M = 3.24$, $SD = .773$) and 2-4 times ($M = 2.96$, $SD = .875$), never and 5 ($M = 2.77$, $SD = .809$) or more times, and one time ($M = 3.18$, $SD = .759$) and 5 or more times. Differences in the reported average GPAs are all compared in table 11.

Table 10

Tukey HSD for Main Effect, Two-Way ANOVA for First-Generation and Financial Aid Advising

Reported Use	Compared to Reported Use	Mean Difference	95% CI	
			Lower Bound	Upper Bound
Never	2-4 times	.28*	.05	.52
Never	5 or more times	.47**	.15	.79
1 time	5 or more times	.41*	.05	.77

**p<.05. **p<.01.*

Research Question 2 - What is the relationship between the frequency of visits to a

given student service and a student's intent to return?

A binomial logistic regression was conducted to determine the effects of service utilization and student demographics on the likelihood that a student would return for another term at their community college. To build on the main model of reported service utilization, student demographics were included to help explain any interactions. To identify the appropriate demographics to include in the model, chi-square tests were conducted to determine if there was an association between a student's reported demographics and their reported use of a service. Table 12 reports the statistically significant variables from the chi-square tests.

When only using the utilization of services for the logistic regression model, it was found to not be statistically significant, $\chi^2(39) = 47.68$, $p = .161$. When the demographic information was entered into the model, along with the utilization of services, the model was again not statistically significant, $\chi^2(53) = 70.22$, $p = .057$. Therefore, no odds ratios can be reported.

Research Question 3 - What is the relationship between utilizing a combination of services and a student's GPA?

The data was analyzed, and dummy variables were created to code students as using one service or using multiple services. Students who indicated not using any services were left out of this model. This coding left 33 students using only one service and 424 students using multiple services.

A one-way ANOVA was conducted to determine if there was difference in mean GPA based on the student utilizing a combination of services. This analysis found no statistically significance difference between the GPA of those students who used one

Table 12

Chi-Square Test to Determine Association Between Demographics and Service Utilization

Demographic	Service	Never		1 Time		2-4 Times		5+ Times		$\chi^2(9)$
		n	%	*n*	%	*n*	%	*n*	%	
Race/Ethnicity	Career Counseling	296	61.5	81	16.8	83	17.3	21	4.4	28.94**
	Tutoring Services	305	63.4	46	9.6	83	17.3	47	9.8	18.34*
	Financial Aid Advising	187	39.0	93	19.4	143	29.9	56	11.7	40.77***
	Transfer Advising	278	58.8	67	14.2	93	19.7	35	7.4	25.85**
Age	Transfer Advising	287	58.6	68	13.9	98	20.0	37	7.6	17.59**
	Library Resources/Services	160	32.5	57	11.6	122	24.7	154	31.2	16.21**
	Military/Veterans Services	451	91.1	14	2.8	18	3.6	12	2.4	23.54***
Developmental Ed. Status	Academic Advising	58	11.6	101	20.3	253	50.8	86	17.3	10.31*
	Career Counseling	304	61.3	80	16.1	89	17.9	23	4.6	18.71***
	Tutoring Services	312	63.2	47	9.5	84	17.0	51	10.3	16.91**
	Skills Lab	285	58.4	56	11.5	74	15.2	73	15.0	20.06***
	Financial Aid Advising	194	39.5	92	18.7	149	30.3	56	11.4	12.41**
	Student Organizations	383	78.3	41	8.4	41	8.4	24	4.9	9.62*
	Transfer Advising	283	58.2	67	13.8	98	20.2	38	7.8	15.40**
	Library Resources/Services	157	32.0	58	11.8	121	24.6	155	31.6	23.52***
	Disability Services	452	91.9	15	3.0	11	2.2	14	2.8	8.20*
Enrollment Status	Academic Advising	60	12.0	101	20.2	252	50.5	86	17.2	14.82**
	Tutoring Services	313	62.9	48	9.6	85	17.1	52	10.4	8.51*
	Skills Lab	285	58.0	56	11.4	77	15.7	73	14.9	9.91*
	Computer Labs	202	41.1	51	10.4	107	21.7	132	26.8	11.98**
	Transfer Advising	587	58.5	69	14.1	97	19.8	38	7.7	23.46***
	Library Resources/Services	160	32.4	58	11.7	121	24.5	155	31.4	49.99***
Terms Enrolled	Computer Labs	201	40.9	51	10.4	108	22.0	131	26.7	25.77*

*$p < .05$. **$p < .01$. ***$p < .001$.

service and those who used two or more services, $F(2, 479) = .226$, $p = .798$. To then see if the student's reported demographic and utilization of services impacted their GPA several two-way ANOVAs were conducted, similar to those under research question one. The two-way ANOVA analysis found that there were no interaction effects between the student's demographics and their reported utilization of services on GPA. Furthermore, main effects in each model were not found to be statistically significant.

Research Question 4 - What is the relationship between utilizing a combination of services and student's intent to return?

A logistical regression was preformed to determine the effects of using multiple services on the likelihood that a student would be retained at the community college. The model was not statistically significant, $\chi^2(1) = 6.11$, $p = .434$. As done previously, the chi-square test was run to determine if any of there was an association between the student's report of using multiple services and student demographics, table 13 displays the results of this analysis. When the three statistically significant associated demographics, determined by the crosstab and chi-square analysis from table 13 were added, the model was found to be statistically significant, $\chi^2(4) = 21.299$, $p < .001$. This model explained 7.8% (Nagelkerke R^2) of the variance in retention and correctly classified 76.0% of cases. The results of the variables in the model are shown in table 14. Since the research question is focused on the use of multiple services on a student's intent to return, the multiservice use variable is not statistically significant. Therefore, we are unable to interpret the odd ratio any further.

Table 11

Frequencies and Chi-Square Results for Student Demographics and Multi-Service Use

Demographic	One Service Only		Two or More Services		*df*	$\chi 2$
	n	%	*n*	%		
Gender	37	7.2	449	87.2	6	7.13
Race/Ethnicity	37	7.5	425	86.6	8	5.78
Age	37	7.2	451	87.2	2	6.18*
Developmental Education	37	7.2	449	87.2	2	14.31**
Enrollment Status	37	7.0	452	85.9	2	27.19***
Total Terms	36	7.0	450	87.5	8	9.46
First-Generation Status	37	7.0	458	86.1	2	.415

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 12

Logistic Regression Predicting Likelihood of Retention

	B	SE	Wald	*df*	*p*	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
Mutliservice	.23	.44	.28	1	.599	1.26	.53	2.97
Age	.64	.30	4.48	1	.034	1.90	1.05	3.44
Developmental Education Status	-.52	.25	4.123	1	.042	.60	.36	.98
Enrollment Status	.93	.25	13.82	1	.000	2.53	1.55	4.13
Constant	.42	.43	.99	1	.319			

Summary

Throughout this chapter results were presented to determine the association between using services at community college and student success. This study utilized data from a community college's 2019 CCSSE (N = 532). The data was analyzed using various statistical methods to answer four research questions. ANOVAs were used to help address research question one and three (service use and GPA), while logistic regression was used in research questions two and four (service use and intent to return). The logistic regressions utilized results from a crosstab and chi-square analysis to better

understand the association between the independent variables.

In research question one, what is the relationship between the frequency of visits to a given student service and a student's GPA, it was determined that the frequency of use of financial aid advising was statistically significant ($p = .011$). It was also determined that main effects for race/ethnicity ($p < .001$) and developmental education status ($p < .05$) were statistically significant. Therefore, we reject the null hypothesis and conclude that there is sufficient evidence to support the claim that frequency of service use is associated with a student's GPA.

Research question two asked if there as an association between a student's frequency of use of services and their intent to return to the community college. The model for the logistic regression was not statistically significant when looking at the utilization of services ($p = .161$), nor statistically significant when adding in demographic information ($p = .057$). Since the p-values of both models is greater than .05, we fail to reject the null hypothesis, and conclude that there is not sufficient evidence to support the claim that frequency of service use is associated with a student's intent to return to their community college.

When looking at the relationship between utilizing a combination of services and a student's GPA, research question three, an analysis was conducted using AVONAs. The results showed that the main effect of age when looking at multiple service use was statistically significant ($p = .041$), but the reported service utilization was not statistically significant ($p > .05$). Due to the service utilization p-value, we fail to reject the null hypothesis, and conclude that there is not sufficient evidence to support the claim that utilizing multiple services is associated with a student's GPA.

Lastly, as research question four was analyzed, it was determined that the

logistical regression model was statistically significant when it included both the combination of service use and student demographics ($p < .001$). Since the predicting variable of reported service utilization was not statistically significant ($p = .599$), we fail to reject the null hypothesis, and conclude that there is not sufficient evidence to support the claim that utilizing multiple services on campus is associated with a student's intent to return to the community college.

The results from research question one is not able to fully support what has been previously found in the literature as it relates to financial aid advising. While the results of research questions two, three, and four do not reinforce previous findings. Comparing the results of this study to those of previous studies will be covered in the next chapter, along with recommendations for practitioners and future research.

Chapter 5: Discussion and Recommendations

This chapter will review and discuss the findings of this study, which analyzed reported student use of services and their association with grade point average (GPA) or intent to return to the college. It will first review the study and summarize the findings as laid out in chapter four. The results of this study will then be compared to previous research conducted around student services and success. Finally, recommendations for practice and future research will be presented.

Summary and Discussion of the Study

Community colleges across the country help students connect educational outcomes to career goals. For approximately one-third of students, they are able to graduate from their two-year college within three years (Tippett & Kahn, 2018a). This does not mean that the other two-thirds drop out or do not complete a credential, just that some students either took longer than three years or they might have transferred to another school prior to graduating. To help students maintain focus and be successful, colleges have employed resources on campus for students to receive additional support. Services like financial aid advising, tutoring, academic advising, and student life have all been proven to help students maintain continuous enrollment and increase the student's overall grade point average (Drake, 2011; Habley et al., 2010; Hatch & Garcia, 2017; McClenney & Dare, 2013; Nakajima et al., 2012; Smith & Allen, 2014). The majority of studies focusing on student success and use of student resources, only look to see if a student used the resource and not at the frequency of which the student visited that service. This study looked to better understand the association between the frequency of use of student services and a student's GPA or intent to return to the college.

In the spring semester of 2019, community colleges administered the Community

College Survey of Student Engagement (CCSSE). This survey asked students to report on their activities inside and outside the classroom, demographic information, and how successful they felt. To determine if associations existed between student's uses of student services and their GPA or intent to return, data from one community college in North Carolina was used. The following research questions were the focus of the study:

1. What is the relationship between the frequency of visits to a given student service and a student's GPA?
2. What is the relationship between the frequency of visits to a given student service and a student's intent to return?
3. What is the relationship between utilizing a combination of services and a student's GPA?
4. What is the relationship between utilizing a combination of services and student's intent to return?

For the research questions the null and alternate hypotheses can be summarized as follows:

Null hypotheses: There is no difference in the student's success (GPA or intent to return) based on the student's reported utilization of services.

Alternative hypotheses: There is a difference in the student's success (GPA or intent to return) based on the student's reported utilization of services.

Service Utilization and GPA: Summary and Discussion

Research questions one and three both focused on reported service utilization and the student's GPA. The ANOVA analysis for research question one provided statistically significant results to show that students who utilized financial aid advising had differences in their mean GPA, $F(3, 460) = 6.653$, $p < .001$. The Tukey HSD post-hoc

analysis showed that students who reported never utilizing financial aid advising had a higher GPA than those students who attended 2-4 times (.282, 95% CI [.05, .52]) and 5 or more times (.471, 95% CI [.15, .79]). The analysis also demonstrated that students who reported using financial aid advising once had a higher GPA (.409, 95% CI [.77, .05]) than those reporting that they used it 5 or more times. Therefore, for research question one, we can reject the null hypotheses and conclude that there is sufficient evidence to support the claim that the reported utilization of services is associated with a student's GPA. This study did not look at the root causes for these differences in a student's GPA but looking at the financial aid process we can speculate why these differences exist.

Students typically start off the financial aid process by completing the Free Application for Federal Student Aid (FAFSA) online. The student will be notified if they are eligible for aid or not, and if they are a letter from the college will be sent to them. Typically, students who fully complete the FAFSA online without any issues or concerns do not meet with a financial aid advisor. Some students are select for verification, which means additional documents are needed to ensure what they listed on their FAFSA is correct, again these students would only need to meet with a financial aid advisor once to turn in their verification documents. The students who visit financial aid advising more than once might either be confused by the process or are not making satisfactory academic progress (SAP) in their current academic journey at the college, either their GPA is too low, or they are not successfully completing 67% of their coursework. Students who are not making SAP would need to meet with a financial aid advisor to determine if their aid can be reinstated, and a separate appeal form that would need to be completed. Students who have to work through SAP appeals have to reflect on their previous academic performance and critically think about ways that they can improve.

Therefore, it would align with the findings of this study stating that those who report visiting financial aid advising multiple times would have a lower GPA than those students who use them no more than once.

The third research question used ANOVAs to determine if there was a statistically significant difference in the mean GPA for students who used one service compared to students using multiple services. The use of one-way ANOVAs was first used to determine if the use of service was associated with the student's GPA. The analysis continued to then use two-way ANOVAs to determine if there were any interactions between the student's demographic information and use of services on the student's GPA. The results of these analyses found no statistically significant difference in a student's GPA based on their reported utilization of multiple services. Therefore, for research question three, we fail to reject the null hypothesis, and conclude that there is not sufficient evidence to support the claim that reported combination use of services is associated with a student's GPA.

Service Utilization and Intent to Return: Summary and Discussion

Employing a logistic regression, research questions two and four analyzed the student's reported service utilization and if they planned to take courses at the college within the next 12 months. In the second research question, the logistic regression was not statistically significant. With the p-values of the model being greater than .05, we fail to reject the null hypothesis, and conclude that there is not sufficient evidence to support the claim that frequency of service use is associated with a student's intent to return to their community college.

The final research question utilized a logistic regression to determine if there was an association between the student's reported use of multiple services and their intent to

return to the community college. The model was statistically significant, but the reported use of service variable in the model was not statistically significant. Due to this variable in the model not being statistically significant, we fail to reject the null hypothesis, and conclude that there is not sufficient evidence to support the claim that combination use of services is associated with a student's intent to return to their community college.

Findings Related to Previous Research

Each time a student visits a service they are taking time out of their day and busy schedule. This time put towards using services on campus can be considered an investment into their education. These investments take energy, something that Astin (1984) discussed in his theory of student involvement. Even though Astin studied students at four-year colleges, a student's energy at a two-year college can be seen as critical to a student's success. As this study only found statistically significant findings within students reported utilization of financial aid advising, student involvement within financial aid advising demonstrated that students who were less involved in the financial aid advising process were more successful by maintaining a higher GPA. Tinto (1999) also studied students at four-year institutions and found that "four institutional conditions stand out as supportive of retention: information/advice, support, involvement, and learning" (p. 5). The study that was conducted for this paper, did not find any statistically significant findings when retention was the dependent variable. Due to there being no positive impact on student success in this study, it can be viewed that students at this two-year college were dealing with more transactional interactions than transformational interactions as described by Astin (1984) and Tinto (1999).

As mentioned earlier in this study, previous research primarily focused on the overall use of services as it related to the student's success. The study supports some of

the previous research, mainly around financial aid advising, while other service's success outcomes could not be corroborated. Bremer et al.'s (2013) previous research at community colleges focused on students who received financial aid and student demographic information, they determined that those who received funds had a higher GPA than those students who did not. The current study did not look at those students who did and did not receive financial aid, but rather if they used financial aid advising and those students who did not use this service or used it once had a higher GPA than those students who utilized them several times. Sanchez and Smith (2017) community college study on non-U.S. citizens found that GPA was not impacted by financial aid status, meaning if a student was eligible or ineligible for financial aid. Again, the current study did not include the financial aid status, but it can be theorized that students who are ineligible for financial aid would not utilize financial aid advising or only use this service once to determine why they were ineligible or discuss other ways to pay for college. Therefore, the idea that ineligible students use financial aid advising very little would contradict Sanchez and Smith's (2017) findings, since GPA differences were found.

The reported utilization of other services outside of financial aid advising were not statistically significant within this study. This means that the results of this study do not align with other studies, Donaldson et al. (2016), Drake (2011), and Smith and Allen (2014) on two- and four-year institution's academic advising's impact on student success; Bremer et al. (2013), Kostecki and Bers (2008), and Vick et al. (2015) studies on the increase GPA of students who utilize tutoring services at community colleges; Fong et al. (2018) notation that community college students with disabilities had higher GPA's if they worked with staff on reasonable goals compared to those who had overreaching goals; and Strapp and Furr's (2010) study showing that four-year college students had

higher involvement in student life had higher GPAs.

Previous studies have found that students who utilize academic advising are more successful as those students understand their degree plan, feel connected to the college, and have positive relationships with advisors (Donaldson et al., 2016; Drake, 2011; McClenny & Dare, 2013; Smith & Allen, 2014). The current study presented the mean of GPAs for each utilization group was different, never (M = 3.24, SD = .793), one time use (M = 3.14, SD = .806), two-four times (M = 3.04, SD = .852), and five or more times (M = 3.10, SD = .747). However, these mean differences were not statistically significant. The other success measure that was focused on, intent to return, could not be predicted with statistical significance.

Tutoring services, in the past has also demonstrated a positive impact on a student's success. The increased GPA that Kostecki and Bers (2008) discovered for students who utilized tutoring over those who did not, and Vick et al. (2015) increased overall success of students who used tutoring cannot be confirmed through this study. Similar to all service areas, the mean GPAs for each utilization group did fluctuate, but those differences were not statistically significant. The logistic regression was unable to predict if students who utilized tutoring were likely to return for a future semester. Therefore, we are unable to support Kostecki and Bers (2008) finding that tutoring contributed to higher persistence rates.

For students with disabilities, this study was unable to identify those students making the analysis for those services skewed. The CCSSE does ask if a student has a documented disability and if they have disclosed that disability to the college. By not having this information the analysis surrounding disability services' impact on student success could not be full ascertained.

Some of the previous studies focused on student demographics/attributes in order to determine if the student would be successful. Even though this study focused on service utilization, those demographics/attributes were considered to see if there were any interaction effects between reported service utilization and demographics. Fike and Fike (2008) stated that completion of developmental education was a strong indicator that students would be retained at their college. Within this study conducted here, the chi-squared test did find an association between developmental education and use of student services, but it was not a predictor if the student would return for a future semester. The two models, only service use and service use with demographics, were not statistically significant.

Recommendations for Practice

From the study conducting in this paper, the results allow some recommendations to be made for college administrators. These two recommendations are partnered with previous research to demonstrate that student success should be focused on, not just a one size fits all mold to help students.

Proactive Financial Aid Advising

By analyzing the student's reported use of services and their GPA or intent to return, this study found that students who frequented financial aid advising more had lower GPAs than those students who used this service at most once. Even though this study did not focus on the exact reason that students used financial aid advising, which is addressed below in future research, it would be worthwhile to make financial aid advising more proactive. To achieve proactivity, financial aid advisors should make initial connections with students as they apply to the college. Some students complete their financial aid application as they apply to the college, while others wait for direction and

support. For students who are beyond the application phase and taking classes, it would be helpful for the financial aid advising team to proactively reach out to those students who have struggled to maintain satisfactory academic progress. This can be done through direct e-mail communication, phone calls, or workshops for this group of students. DiTommaso (2016) stated that students who place into developmental courses need more assistance due to a confusing process, as confusion can lead to more visits to financial aid advising. Since we know that students who utilize this service more often have lower GPAs it would be beneficial to work on proactive financial aid advising for all students. This would mean that financial aid advisors would need to try to anticipate what the student may need instead of providing just in time advising. For those new students it could mean that additional information is provided during the application process to help clear up the process and review all of the necessary steps, whatever it would take to help clear up any potential confusion. The financial aid advising team could also implement proactive outreach to those students who struggled in previous years. Currently, students who are on SAP warning or appeal do not receive any contact from the financial aid office during the semester to help promote success. Bremer et al. (2013) found that students who received financial aid were more likely to return and have higher GPAs than those students who did not have financial aid. This study provided results that indicated that students who used financial aid advising once had higher GPAs than those who used the service several times. Furthermore, financial aid advising use might be the representation that the student needs additional assistance. Advisors in this area are key individuals on campus to make connections with students and understand what they need. The advisors could then make the appropriate referrals to other campus resources in order to provide additional assistance to the student. The proactive outreaches to help promote

success could have a positive impact on the students and may increase the student's GPA, make it easier for the student to stay in good academic standing, maintain satisfactory academic progress, get connected to other resources, and graduate with the required GPA.

Limit Mandatory Services

The findings of this study show that students who utilize many of the services on campus, no matter how many times they use that service, have no statically significant difference in their success. The average GPA of students who utilize service such as academic advising, tutoring, student life, military/veteran's services, and library services, cannot be determined solely based on the use of that one service. The same can be said about trying to predict a student's intent to return, the use of these services cannot predict that factor. Culp (2005) said that "students cannot succeed unless institutions know who they are, what they know, what they need, where they want to go, and where they are in the educational process" (p. 36). One way some colleges are getting to know their students it to make services mandatory. Dudley et al. (2015) found that students do know about the campus services, but do not take advantage of them due to scheduling issues. The college where this study was conducted does require students to utilize tutoring, career counseling, or library services if they are in certain courses, they were in the process of requiring advising to be mandatory but had not yet implemented that policy. Yes, mandatory makes all students utilize a service, but this study found that one visit had no greater impact than no visits or multiple visits. Therefore, colleges need to be aware of how forcing students to meet with certain services truly impacts that student's success and mandatory services should be used scarcely until that college is able to get to know the student and understand their needs through future research to determine the

variables that impact students.

Recommendations for Future Research

The study conducted here demonstrates how the utilization of services impacts a student's success. Based on the results, a few other studies could be conducted to either confirm the findings of this study, or better understand how the services provided within each service impacts student success.

Utilize Institutional Reporting

The CCSSE was found to be valid in several studies (Angell, 2009; Marti, 2008; McClenney et al., 2012), but the tool does use student reported data along scales that are rounded up or down. For example, when a student had to report their GPA, they had five options: (1) D or lower, (2) C, (3) B, (4) A, or (5) do not have a GPA. This interval scale might not be as accurate as the student's true GPA listed in the college's student records, or student information system (SIS). In the SIS students' GPA is on a ratio scale, where there could be a true zero GPA (Coladarci & Cobb, 2014). The college where this study was conducted also allows students to have a D in some courses and that is considered passing, granted the cumulative GPA for the student needs to be a 2.0 in order to graduate or maintain SAP status. With the increased use of technology on-campus, staff members are able to more easily track their interactions with students and cross reference that information within the SIS. To verify the findings of this study or determine if there are other statistically significant service utilizations, a study could be conducted that uses institutional data. Similar to the study conducted in this paper, using institutional data will allow for a more robust analysis of GPA and if the student retention. The analysis could be done through ANOVAs or MANOVAs to determine if there is an association between services and success. This would also allow for more consistency in the

measuring being reported, what counts as service utilization and what services were being utilized.

Impacts of the Reason for Service

Many of the services offered by institutions can only be done so through a specific office. Tinto (1999) states that because of this specialization of services, the relationships that are developed have to be focused. As noted in the study, some offices, like financial aid advising, provide a myriad of services to help students. This is no different across the campus and the survey tool, the CCSSE, does not break down or combine the services based on the office. In order to better understand why a student might visit financial aid advising five or six times, it would be beneficial to understand why the student was there. For example, DiTommaso (2016) found that students who were in developmental courses needed more support from financial aid because they were confused about the process, therefore if the service itself was tracked institutions could determine if students who only need help applying for the FAFSA might have different successes than students who need to complete a SAP appeal. The data needed for this is now tracked in the college's student retention software. Staff, upon interacting with students, note what took place and the reason for the interaction. The data could be utilized along with data from the college's student information system to understand how the utilization of each service within office. Determining the reason students are visiting could help pinpoint areas to focus on to help decrease unnecessary use of the service and potential help the students be more successful.

Conclusion

Colleges administer the Community College Survey of Student Engagement (CCSSE) to gauge their own practices and student behaviors that are associated with

student success (CCSSE, 2019b). As part of this survey, students had to indicate how often they utilized support services, such as financial aid advising, tutoring, academic advising, and library services. Students also had to note what they thought their grade point average (GPA) was at the time of the survey and if they planned to return to the college the following year. Utilizing this data from one community college in North Carolina, this study looked to reveal if there was an association between the frequency of office utilization and the student's success.

The findings of this study indicate that students who utilized financial aid advising more often had a lower GPA than those who used this service no more than one time. The differences in the reported use and the corresponding GPAs that students recorded were statistically significant. Even though it can be hypothesized why those who needed to visit financial aid advising several times had lower GPAs than those who went less, it can be implied that these findings do support that of previous studies (Smith & Sanchez, 2017). As this study demonstrated that students who had fewer visits to financial aid advising had higher GPAs, it would be recommended that prior to any student visiting their office financial aid advisors work proactively to meet the needs of students by conducting outreach and implement programming to help students.

The summary and findings, as laid out, also found that there was no evidence to support the claim that the frequency of service utilization or combination of service utilization was associated with a student's intent to return to the college. It also failed to find evidence to support the claim that the combination of service utilization was associated with a student's GPA. Due to this, it would be recommended, as supported by DiTommaso (2016), that making utilization of any service not be mandated by the college.

Additionally, further research would be needed to help the college understand what factors are present that impacts student success. Since each service has multiple functions, those individual functions should be analyzed to see how that is associated with a student's success. For example, within academic advising, they work with students who are there for academic planning, academic probation, registration support, and career counseling. The college could also utilize the information they have in their own records to determine in the student reported data aligns with the actual information they have on students. With the data that is included in the college's system, other variables could be considered to help identify factors that are impacting a student's success. The college would also be able to do a more in-depth review of the student's habits, such as actual visits to services/combination of services, number of credit hours taken, and course delivery formats, to help pinpoint opportunities where the college can intervene to support success. Overall, community colleges must understand who their students are and how the use of support services impacts student success.

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Appendix A

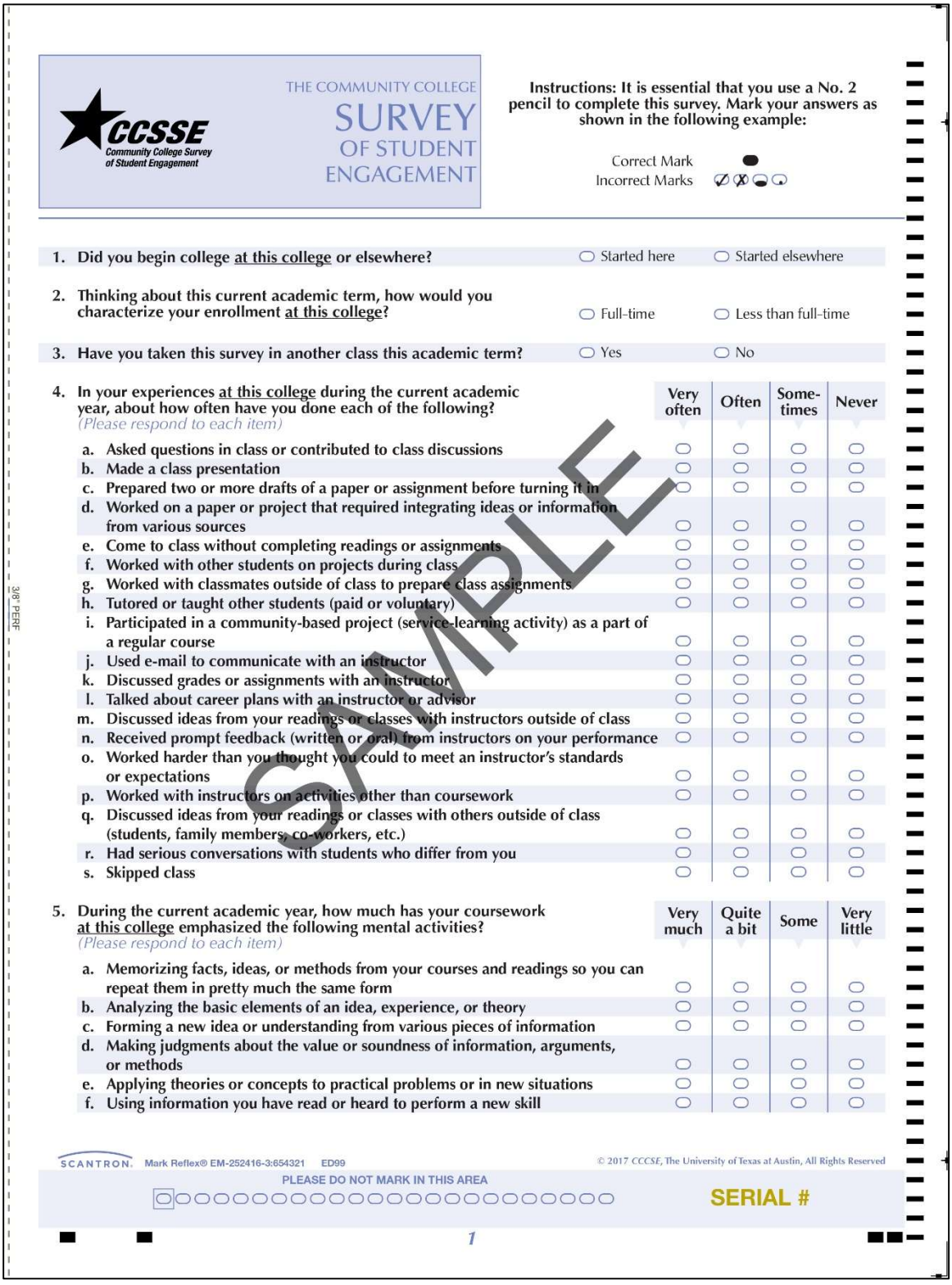
Courses that Administered CCSSEE

Course	Course Name	Course Prerequisite
COS-112	Salon I	
COS-126	Esthetics Salon II	COS-125: Esthetics Salon I
COS-113	Cosmetology Concepts II	COS-111 Cosmetology Concepts and COS-112: Salon I
COS-118	Salon IV	COS-111 Cosmetology Concepts and COS-112: Salon I
AHR-211	Residential System Design	
OST-142	Med Office Terms II	OST-141: Med Office Terms I
ELC-111	Intro to Electricity	
ELC-117	Motors and Controls	ELC-125: Diagrams and Schematics
SPA-112	Elementary Spanish II	SPA-111: Elementary Spanish I
PHY-151	College Physics I	MAT-171: Precalculus Algebra
REL-110	World Religions	
ENG-112	Writing/Research in the Disc	ENG-111: Writing and Inquiry
HUM-110	Technology and Society	
LDD-183	Air, Exh, Emissions	
ELC-125	Diagrams and Schematics	
ELN-232	Intro to Microprocessors	
ELC-215	Electrical Maintenance	ELC-117: Motors and Controls
AHR-110	Intro to Refrigeration	
ELN-131	Analog Electronics I	ELC-139: AC Circuit Analysis
AHR-151	HVAC Duct Systems I	
AHR-115	Refrigeration Systems	AHR-110: Intro to Refrigeration
AHR-215	Commercial HVAC Controls	AHR-110: Intro to Refrigeration or ELC-111: Intro to Electricity or ELC-112: DC/AC Elctricity
AHR-120	HVACR Maintenance	
BPR-130	Print Reading-Construction	
ENG-111	Writing and Inquiry	DRE-098: Integrated Reading & Writing III
AUT-141	Suspension & Steering Systems	
POL-120	American Government	
ENG-125	Creative Writing I	ENG-111: Writing and Inquiry
COM-231	Public Speaking	
EDU-151	Creative Activities	
BIO-110	Principles of Biology	
BIO-169	Anatomy and Physiology II	BIO-168: Anatomy and Physiology I
WLD-132	GTAW (TIG) Plate/Pipe	WLD-131: GTAW (TIG) Plate

PSY-150	General Psychology	ENG-002: Transitional English or ENG-111: Writing and Inquiry
CIS-110	Introduction to Computers	
ART-122	Three-Dimensional Design	
SOC-210	Introduction to Sociology	
WLD-141	Symbols & Specifications	
COM-110	Intro to Communication	
WLD-131	GTAW (TIG) Plate	
GRD-152	Computer Design Tech I	GRD-151: Computer Design Basics
FRE-111	Elementary French I	
SPA-111	Elementary Spanish I	
WLD-116	SMAW (Stick) Plate/Pipe	WLD-115: SMAW (Stick) Plate
BIO-275	Microbiology	BIO-110: Principles of Biology or BIO-111: General Biology I or BIO-163: Basic Anatomy & Physiology or BIO-165: Anatomy and Physiology I or BIO-168: Anatomy and Physiology I
BIO-163	Basic Anat & Physiology	ENG-002: Transitional English or ENG-111: Writing and Inquiry
MUS-110	Music Appreciation	
FRE-112	Elementary French II	FRE-111: Elementary French I
GRD-151	Computer Design Basics	
BIO-111	General Biology I	ENG-002: Transitional English or ENG-111: Writing and Inquiry
ART-111	Art Appreciation	
MAT-285	Differential Equations	MAT-272: Calculus II
AST-111	Descriptive Astronomy	
ART-171	Computer Art I	
HIS-132	American History II	ENG-002: Transitional English or ENG-111: Writing and Inquiry
HEA-110	Personal Health/Wellness	
MAT-171	Precalculus Algebra	MAT-003: Transitional Math or DMA-010 to 080: Developmental Math or MAT-121: Algebra/Trigonometry I
ACC-129	Individual Income Taxes	
MAT-272	Calculus II	MAT-271: Calculus I
BUS-230	Small Business Management	
PHI-240	Introduction to Ethics	ENG-111: Writing and Inquiry
MAT-071	Precalculus Algebra Support	
BIO-168	Anatomy and Physiology I	ENG-002: Transitional English or ENG-111: Writing and Inquiry
BUS-115	Business Law I	
ACC-120	Prin of Financial Accounting	

Appendix B

Sample CCSSE



CCSSE Community College Survey of Student Engagement

THE COMMUNITY COLLEGE SURVEY OF STUDENT ENGAGEMENT

Instructions: It is essential that you use a No. 2 pencil to complete this survey. Mark your answers as shown in the following example:

Correct Mark ●
Incorrect Marks ⊘ ✗ ◒ ◔

1. Did you begin college at this college or elsewhere?	○ Started here	○ Started elsewhere
2. Thinking about this current academic term, how would you characterize your enrollment at this college?	○ Full-time	○ Less than full-time
3. Have you taken this survey in another class this academic term?	○ Yes	○ No

4. In your experiences at this college during the current academic year, about how often have you done each of the following? *(Please respond to each item)*	Very often	Often	Some-times	Never
a. Asked questions in class or contributed to class discussions	○	○	○	○
b. Made a class presentation	○	○	○	○
c. Prepared two or more drafts of a paper or assignment before turning it in	○	○	○	○
d. Worked on a paper or project that required integrating ideas or information from various sources	○	○	○	○
e. Come to class without completing readings or assignments	○	○	○	○
f. Worked with other students on projects during class	○	○	○	○
g. Worked with classmates outside of class to prepare class assignments	○	○	○	○
h. Tutored or taught other students (paid or voluntary)	○	○	○	○
i. Participated in a community-based project (service-learning activity) as a part of a regular course	○	○	○	○
j. Used e-mail to communicate with an instructor	○	○	○	○
k. Discussed grades or assignments with an instructor	○	○	○	○
l. Talked about career plans with an instructor or advisor	○	○	○	○
m. Discussed ideas from your readings or classes with instructors outside of class	○	○	○	○
n. Received prompt feedback (written or oral) from instructors on your performance	○	○	○	○
o. Worked harder than you thought you could to meet an instructor's standards or expectations	○	○	○	○
p. Worked with instructors on activities other than coursework	○	○	○	○
q. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	○	○	○	○
r. Had serious conversations with students who differ from you	○	○	○	○
s. Skipped class	○	○	○	○

5. During the current academic year, how much has your coursework at this college emphasized the following mental activities? *(Please respond to each item)*	Very much	Quite a bit	Some	Very little
a. Memorizing facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form	○	○	○	○
b. Analyzing the basic elements of an idea, experience, or theory	○	○	○	○
c. Forming a new idea or understanding from various pieces of information	○	○	○	○
d. Making judgments about the value or soundness of information, arguments, or methods	○	○	○	○
e. Applying theories or concepts to practical problems or in new situations	○	○	○	○
f. Using information you have read or heard to perform a new skill	○	○	○	○

SAMPLE

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PLEASE DO NOT MARK IN THIS AREA

SERIAL #

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6. During the current academic year, how much reading and writing have you done <u>at this college</u>? *(Please respond to each item)*

	None	1–4	5–10	11–20	More than 20
a. Number of assigned textbooks, manuals, books, or packets of course readings	○	○	○	○	○
b. Number of books read on your own (not assigned) for personal enjoyment or academic enrichment	○	○	○	○	○
c. Number of written papers or reports of any length	○	○	○	○	○

7. Mark the response that best represents the extent to which your examinations during the current academic year have challenged you to do your best work <u>at this college</u>.

Extremely challenging ⑦ ⑥ ⑤ ④ ③ ② ① Extremely easy

8. Which of the following have you done, or are you currently doing <u>at this college</u>? *(Please respond to each item)*

	Yes	No
a. Internship, field experience, co-op experience, or clinical assignment	○	○
b. An English course taught specifically for students whose first language is not English (ESL, ESOL)	○	○
c. Developmental/remedial reading course (also referred to as Basic Skills, College Prep, etc.)	○	○
d. Developmental/remedial writing course (also referred to as Basic Skills, College Prep, etc.)	○	○
e. Developmental/remedial math course (also referred to as Basic Skills, College Prep, etc.)	○	○
f. Honors course	○	○

9. How much does <u>this college</u> emphasize the following? *(Please respond to each item)*

	Very much	Quite a bit	Some	Very little
a. Encouraging you to spend significant amounts of time studying	○	○	○	○
b. Providing the support you need to help you succeed at this college	○	○	○	○
c. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	○	○	○	○
d. Helping you cope with your non-academic responsibilities (work, family, etc.)	○	○	○	○
e. Providing the support you need to thrive socially	○	○	○	○
f. Providing the financial support you need to afford your education	○	○	○	○

10. About how many hours do you spend in a typical 7-day week doing each of the following? *(Please respond to each item)*

	None	1–5	6–10	11–20	21–30	More than 30
a. Preparing for class (studying, reading, writing, rehearsing, doing homework, etc.)	○	○	○	○	○	○
b. Working for pay	○	○	○	○	○	○
c. Participating in college-sponsored activities (organizations, campus publications, student government, intramural sports, etc.)	○	○	○	○	○	○
d. Providing care for dependents living with you (parents, children, spouse, etc.)	○	○	○	○	○	○
e. Commuting to and from classes	○	○	○	○	○	○

11. How much has your experience <u>at this college</u> contributed to your knowledge, skills, and personal development in the following areas? *(Please respond to each item)*

	Very much	Quite a bit	Some	Very little
a. Acquiring job- or work-related knowledge and skills	○	○	○	○
b. Writing clearly and effectively	○	○	○	○
c. Speaking clearly and effectively	○	○	○	○
d. Thinking critically and analytically	○	○	○	○
e. Solving numerical problems	○	○	○	○
f. Working effectively with others	○	○	○	○
g. Learning effectively on your own	○	○	○	○
h. Developing clearer career goals	○	○	○	○
i. Gaining information about career opportunities	○	○	○	○

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12. **This section has three parts. Please answer all three parts, indicating (1) how often you have used the following services during the current academic year, (2) how satisfied you are with the services, and (3) how important the services are to you at this college.** *(Please respond to each item)*

	(1) Frequency of Use				(2) Satisfaction				(3) Importance		
	5 or more times	2–4 times	1 time	Never	Very	Some-what	Not at all	N.A.	Very	Some-what	Not at all
a. Academic advising/planning	○	○	○	○	○	○	○	○	○	○	○
b. Career counseling	○	○	○	○	○	○	○	○	○	○	○
c. Job placement assistance	○	○	○	○	○	○	○	○	○	○	○
d. Peer or other tutoring	○	○	○	○	○	○	○	○	○	○	○
e. Skill labs (writing, math, etc.)	○	○	○	○	○	○	○	○	○	○	○
f. Child care	○	○	○	○	○	○	○	○	○	○	○
g. Financial aid advising	○	○	○	○	○	○	○	○	○	○	○
h. Computer lab	○	○	○	○	○	○	○	○	○	○	○
i. Student organizations	○	○	○	○	○	○	○	○	○	○	○
j. Transfer advising/planning	○	○	○	○	○	○	○	○	○	○	○
k. Library resources and services	○	○	○	○	○	○	○	○	○	○	○
l. Services for students with disabilities	○	○	○	○	○	○	○	○	○	○	○
m. Services for active military and veterans	○	○	○	○	○	○	○	○	○	○	○

13. **During the current academic term at this college, I completed registration before the first class session(s).**
- ○ Yes; I was registered for all of my courses before the first class session(s)
- ○ Mostly; I was registered for most of my courses before the first class session(s)
- ○ Partly; I was registered for some of my courses before the first class session(s)
- ○ No; I was not registered for any of my courses before the first class session(s)

14. **The one response that best describes my experience with orientation when I first came to this college is:**
- ○ I took part in an online orientation prior to the beginning of classes
- ○ I attended an on-campus orientation prior to the beginning of classes
- ○ I enrolled in an orientation course as part of my course schedule during my first academic term
- ○ I was not aware of a college orientation
- ○ I was unable to participate in orientation due to scheduling or other issues

15. **During my first academic year at this college, I participated in a first-year experience program.**
- ○ Yes
- ○ No

16. **During my first academic term at this college, I participated in an organized learning community (a formal program in which groups of students take two or more classes together).**
- ○ Yes
- ○ No

17. **During my first academic term at this college, I participated in a student success course (a course that teaches the skills needed to succeed in college).**
- ○ Yes
- ○ No

18. **I was told that I should enroll in a developmental/remedial course (also referred to as Basic Skills, College Prep, etc.) in my first academic term at this college, and I...**
- ○ Did enroll in more than one of these courses
- ○ Did enroll in one of these courses
- ○ Did not enroll in any of these courses
- ○ Not applicable

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SERIAL # PLEASE DO NOT MARK IN THIS AREA

19. During the current academic term at this college, my instructors clearly explained a class attendance policy that specified how many classes I could miss without a penalty.
- All of my instructors explained a class attendance policy
- Most of my instructors explained a class attendance policy
- Some of my instructors explained a class attendance policy
- None of my instructors explained a class attendance policy

20. Before the end of my first academic term at this college, an advisor helped me develop an academic plan (a personalized plan with a defined sequence of courses for completing a college certificate or degree and/or for transferring to a 4-year college or university).
- Yes
- No
- I'm still in my first academic term; I have not yet developed an academic plan

21. Someone at this college contacts me if I am struggling with my studies to help me get the assistance I need.
- Yes
- No
- Not applicable

22. During the current academic year at this college, I have participated in supplemental instruction/supplemental learning (extra class sessions with the instructor or an experienced student).
- Never
- Less than 1 time a week
- 1–2 times a week
- 3–4 times a week
- More than 4 times a week

23. How likely is it that the following issues would cause you to withdraw from class or from this college? *(Please respond to each item)*	Very likely	Likely	Somewhat likely	Not likely
a. Working full-time	○	○	○	○
b. Caring for dependents	○	○	○	○
c. Academically unprepared	○	○	○	○
d. Lack of finances	○	○	○	○
e. Transfer to a 4-year college or university	○	○	○	○

	Extremely	Quite a bit	Somewhat	Not very
24. How supportive are your friends of your attending this college?	○	○	○	○
25. How supportive is your immediate family of your attending this college?	○	○	○	○

26. Indicate which of the following are your reasons/goals for attending this college. *(Please respond to each item)*	Yes	No
a. Complete a certificate program	○	○
b. Obtain an associate degree	○	○
c. Transfer to a 4-year college or university	○	○
d. Obtain or update job-related skills	○	○
e. Change careers	○	○
f. Self-improvement/personal enjoyment	○	○

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SERIAL # PLEASE DO NOT MARK IN THIS AREA

27. Indicate which of the following are sources you use to pay for your tuition at this college. *(Please respond to each item)*

	Major source	Minor source	Not a source
a. My own income/savings	○	○	○
b. Income/savings from family	○	○	○
c. Employer contributions	○	○	○
d. Active military or veteran benefits	○	○	○
e. Grants	○	○	○
f. Scholarships	○	○	○
g. Student loans (bank, etc.)	○	○	○
h. Public assistance	○	○	○

28. When do you plan to take classes at this college again?
- ○ I will accomplish my goal(s) during this academic term and will not be returning
- ○ I have no current plan to return
- ○ Within the next 12 months
- ○ Uncertain

29. At this college, in what range is your overall college grade point average (GPA)?
- ○ A
- ○ B
- ○ C
- ○ D or lower
- ○ I do not have a GPA at this college

30. In what range was your overall high school grade point average (GPA)?
- ○ A
- ○ B
- ○ C
- ○ D or lower
- ○ I do not remember

31. When do you most frequently take classes at this college? *(Mark only one)*
- ○ Day classes (morning or afternoon)
- ○ Evening classes
- ○ Weekend classes

32. During the current academic term, how many classes are you taking... *(Please respond to each item)*

	None	1	2	3	4	5 or more
a. Face-to-face (a class in which all instruction is face-to-face in a classroom)	○	○	○	○	○	○
b. Online (a class in which all instruction is online)	○	○	○	○	○	○
c. Hybrid (a class that is a mixture of face-to-face and online instruction)	○	○	○	○	○	○

33. How many total credit hours have you earned at this college, not counting the courses you are currently taking this academic term?
- ○ None
- ○ 1–14 credits
- ○ 15–29 credits
- ○ 30–44 credits
- ○ 45–60 credits
- ○ Over 60 credits

3/8" PERF

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34. **How many total academic terms have you been enrolled at this college?**
- ○ This is my first academic term
- ○ This is my second academic term
- ○ This is my third or fourth academic term
- ○ This is my fifth or sixth academic term
- ○ I have been enrolled more than six academic terms

35. **Would you recommend this college to a friend or family member?**
- ○ Yes
- ○ No

36. **How would you evaluate your overall educational experience at this college?**
- ○ Excellent
- ○ Good
- ○ Fair
- ○ Poor

37. **Do you have children who live with you and depend on you for their care?**
- ○ Yes
- ○ No

38. **Mark your age group.**
- ○ Under 18
- ○ 18–19
- ○ 20–21
- ○ 22–24
- ○ 25–29
- ○ 30–39
- ○ 40–49
- ○ 50–64
- ○ 65+

39. **Your gender identity:**
- ○ Man
- ○ Woman
- ○ Other
- ○ I prefer not to respond

	Yes	No
40. Are you married?	○	○
41. Is English your native (first) language?	○	○
42. Are you a current or former member of the U.S. Armed Forces, Reserves, or National Guard?	○	○
43. Are you an international student or non-resident alien?	○	○
44. Are you a student-athlete on a team sponsored by this college's athletics department?	○	○

45. **What is your racial or ethnic identification?** *(Mark all that apply)*
- ○ American Indian or Alaska Native
- ○ Asian
- ○ Black or African American
- ○ Hispanic or Latino
- ○ Native Hawaiian
- ○ Pacific Islander (non-Native Hawaiian)
- ○ White
- ○ Other
- ○ I prefer not to respond

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46. What is the highest academic credential you have earned? *(Mark only one)*

- ○ None
- ○ GED
- ○ High school diploma
- ○ Vocational/technical certificate
- ○ Associate degree
- ○ Bachelor's degree
- ○ Master's/doctoral/professional degree

47. Who in your family has attended at least some college? *(Mark all that apply)*

- ○ Mother
- ○ Father
- ○ Brother/Sister
- ○ Child
- ○ Spouse/Partner
- ○ Legal Guardian
- ○ No one

Additional Items
(Please respond to these items if requested)

1.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*11.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
2.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*12.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
3.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*13.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
4.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*14.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
5.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*15.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
6.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*16.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
7.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*17.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
8.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*18.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
9.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*19.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
10.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	*20.*	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ

Using the list provided, please fill in the bubbles that correspond to the code indicating your program, major, or pathway of study. In the top row, indicate the first number in the program code. In the bottom row, indicate the second number in the program code.

⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨

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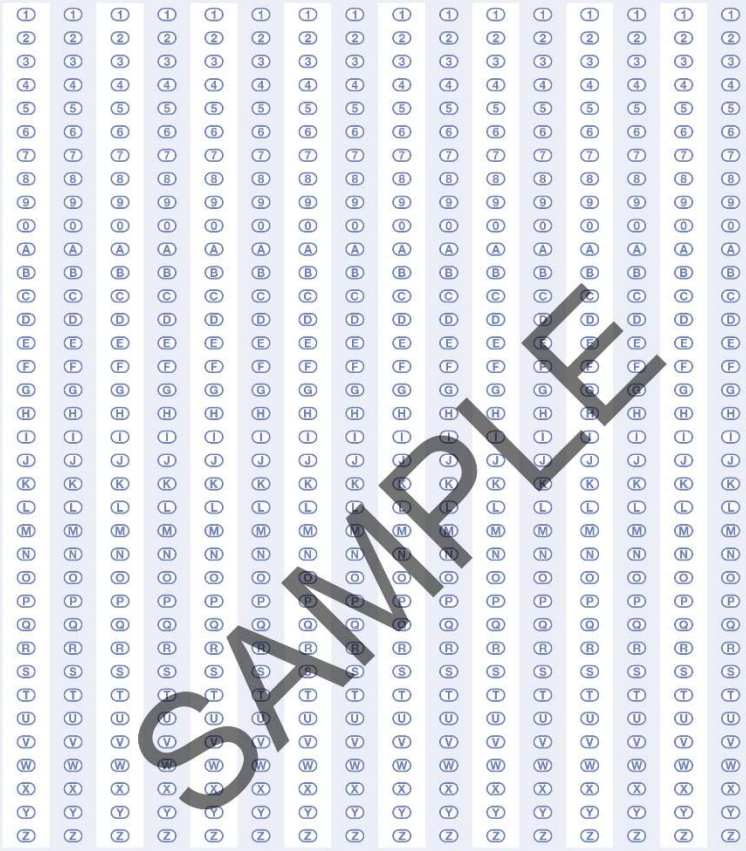
Please provide your student identification number by filling in the corresponding bubbles. For example, in the first column, indicate the first number or letter in your student ID number, and so forth. Please do not enter your social security number. (OPTIONAL)

(Please begin here)



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Thank you for sharing your views.

PLEASE DO NOT MARK IN THIS AREA

SERIAL #