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Ashley Click

University of the Incarnate Word, [aclick@student.uiwtx.edu](mailto:aclick@student.uiwtx.edu)

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A COMPARATIVE EXPLORATION INTO FIRST TIME IN COLLEGE  
STUDENT ACADEMIC PERFORMANCE IN FACE-TO-FACE  
VERSUS REMOTE LEARNING ENVIRONMENTS

by

Ashley L. Click

A DISSERTATION

Presented to the Faculty of the University of the Incarnate Word  
in partial fulfillment of the requirements  
for the degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF THE INCARNATE WORD

August 2022

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Ashley L. Click

## DEDICATION

This dissertation is dedicated to my husband, TJ, and our children, Cassidy and Cobe.  
Thank you for loving me and believing in me every step of the way.

A COMPARATIVE EXPLORATION INTO FIRST TIME IN COLLEGE  
STUDENT ACADEMIC PERFORMANCE IN FACE-TO-FACE  
VERSUS REMOTE LEARNING ENVIRONMENTS

Ashley L. Click, PhD

University of the Incarnate Word

In spring 2020, the COVID-19 pandemic forced educational systems to transition into an emergency remote learning modality. This quantitative study compared retention and productive grade rates of two 16-week academic semesters and compared face-to-face (fall 2019) and remote (fall 2020) emergency remote instruction. The study sample was drawn from the core courses of History, English, and Speech at San Antonio College. Those courses were selected in part due to the high proportion of first time in college students who were considered a vulnerable population regarding performance and persistence. Additional variables (i.e., gender, veteran status, first-generation status, and socio-economic status) were examined to determine whether they were predictors of either productive grade rate or retention. The findings suggested no difference between productive grade rates but higher retention in the face-to-face semester. The findings also indicated that gender (female) was predictive in both modalities, but no other variables were. At a minimum, those results suggested the importance of local assessment of predictors of student success in general, and when making decisions related to remote learning in particular. Finally, results of this study suggested that despite concerns regarding the scholastic impact on students and faculty forced into emergency remote instruction, that did not adversely affect student outcomes.

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## **Chapter 1: The Pandemic and Higher Education**

The 2019 virus, novel coronavirus SARS-CoV2, which is also known as COVID-19, has challenged the world in unimaginable ways, and the true extent of its impact has yet to be seen. As of late November 2021, the World Health Organization (2021) reported 260,867,011 cases of COVID-19 globally, with 47,837,599 cases in the United States. Also, as of late November 2021, the World Health Organization (2021) reported 5,200,267 deaths globally, with 771,919 deaths in the United States. These numbers continue to grow as do the implications of this virus.

Academic systems worldwide from preschool to universities were confronted with barriers that were historically comparable to the H1N1 influenza of 2009 and the influenza pandemic of 1918–1919. Stern et al. (2009) discussed that many cities ordered schools to close during the 1918–1919 pandemic, and cities where schools remained open experienced high absenteeism. To facilitate instruction during that pandemic, schools opted to use a mail-in system to correspond with students and to provide assignments (Stern et al., 2009). Many years later in 2009, the National Center for Health Statistics (2010) stated that H1N1 also prompted schools to close, impacting 468,282 students.

The scope of COVID-19 is much larger. To be specific, COVID-19 disrupted “nearly 1.6 billion learners in more than 200 countries” (Pokhrel & Chhetri, 2021, p. 1). Educational institutions, including universities and community colleges, experienced tremendous burdens and required a constant need for adaptations and innovations to remain open. Academic leadership was forced to reinvent existing practices and procedures to meet the needs of students (Marinoni, van’t Land, & Jensen, 2020).

In the United States, the transition began in March 2020 when over 14 million college students (Hess, 2020) experienced a switch in their instructional modality from face-to-face in-

classroom instruction to some version of virtual or remote instruction due to the pandemic. With permission from San Antonio College, the research site for this applied study, I will reference what occurred during the shift at that campus. Students, faculty, and staff were notified via e-mail, campus websites, and other communication alert systems stating campus was closed and face-to-face courses were switching to remote learning. That alert came midweek during Spring Break 2020. But what was remote learning?

In spring 2020, some educational institutions referred to remote teaching as “emergency remote learning” because it was done rapidly and as a reaction to the developing pandemic. Hodges et al. (2020) explained the circumstances of emergency instruction:

In contrast to experiences that are planned from the beginning and designed to be online, emergency remote teaching (ERT) is a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances. It involves the use of fully remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated. The primary objective in these circumstances is not to re-create a robust educational ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis. (para. 13)

The temporary access and instructional supports varied among institutions and were fluid throughout the semester. Many schools had not previously created a blueprint for learning remotely, so there was not a clear plan as to how to teach remotely. Some institutions let faculty determine how instruction would be facilitated, while others created a general expectation.

This dissertation is focused on remote learning rather than online learning, so it is important to explain the differences and how the modalities will be referenced. Although the exact definitions vary among higher education professionals, I will be referencing the learning modalities utilized by San Antonio College. This is key to understanding how face-to-face and

remote course data are compared and analyzed. Oftentimes, the term “remote learning” is confused with online learning. However, online courses are typically asynchronous and remote courses are synchronous. Asynchronous means that students complete coursework without the need to be present or to log in at a set day or time (Scheiderer, 2021). Synchronous courses are held at a predetermined day and time that is consistent with how face-to-face courses are conducted (Scheiderer, 2021).

### **Overview of Learning Modalities**

Three different types of instruction modalities were offered to students at San Antonio College prior to the pandemic. The most familiar learning modality offered was an on-campus face-to-face course with in-person instruction by a faculty member. That modality suffered the greatest impact from the pandemic because students were required to make the shift from in-person to a virtual instructional mode, which will be referred to as remote learning in this study.

In fall 2020, San Antonio College held those newly “remote” classes on the same day and time as the face-to-face courses would have been conducted if meeting on campus. Aside from referring to this modality as remote learning, Scheiderer (2021) labeled it as online synchronous learning, which is different from online asynchronous. Online asynchronous learning was a modality with which some students had experience. According the 2021 article “Why Online College? Flexibility,” online learning is often asynchronous where students have the flexibility to complete coursework when it best meets their busy work schedules (TheBestSchools.org, 2021).

Synchronous online learning was new to the student population at San Antonio College. To create a synchronous remote learning environment at the college, students logged into Zoom, a web-based meeting tool, to attend classes. Zoom was used in combination with San Antonio College’s learning management system (LMS), Canvas, to facilitate instruction.

An LMS is a tool used by educational institutions to provide students a virtual location similar to a classroom page. The LMS houses course content, discussion boards, assessment tools, the gradebook, and several other features aimed to support learning. Canvas became the LMS at San Antonio College in 2012. Prior to Canvas, Blackboard was the college's LMS.

The shift to Canvas was required by all faculty, and they were expected to use various functions of that LMS to support learning in their courses. From my experience, most faculty embraced Canvas and the various tools within the platform, but there were a few who resisted. Perhaps those who resisted struggled more with the remote transition than those who did not resist.

At San Antonio College, Zoom and Canvas were required to be used by faculty to facilitate instruction during remote learning rather than other virtual options. Zoom was an easy tool as the virtual classroom because it was directly linked in each Canvas course tool bar. Faculty were able to create and schedule reoccurring meetings using the Zoom feature in Canvas. Students simply logged into Canvas, clicked on their course, clicked on Zoom in the tool bar, and joined the class session. The college provided Zoom training and support should faculty need guidance. That new technology became the norm for instruction and college meetings. Many faculty, staff and students even embraced that tool and played with features such as Zoom backgrounds and polling tools.

In addition to class meetings in Zoom, the college administrators urged faculty to use the instruments provided in Canvas such as assessment tools, discussion boards, and announcements. Faculty and students participating in face-to-face courses were and continue to be at all skill levels regarding technology and Canvas. Because of that, the transition to remote was more or less challenging depending on their familiarity with that LMS. To put this into perspective,

instructors were no longer able to pass out notes to students, give in-class quizzes on paper, or provide handwritten feedback on essays. Prior to the pandemic, many faculty had embraced tools in Canvas that allowed much of the aforementioned to be done virtually, but many had not. Those in the latter category were forced to learn how to perform that new remote instructional role at a rapid pace.

A second modality, asynchronous online courses, was minimally impacted by the pandemic because students were already learning in a web-based environment. Historically, distance type learning has been around for decades and has transformed since the start in the mid-nineteenth century (Kentnor, 2014). This modality began by using the U.S. Postal Service as the method of correspondence. OnlineSchools.org's (2021) article "The History of Online Schooling" estimated 25% of college students were enrolled in online courses, and higher educational institutions predicted that number would grow in the next decade. As of January 2022 at San Antonio College, a fully online course is conducted 100% asynchronously and virtually. Students enroll and complete these courses from all over the world. Several disciplines across the college have offered fully online courses for over 10 years in addition to the traditional face-to-face sections held on campus. Due to the growing online enrollment trends, there is a constant push for departments to offer more online courses and for programs to develop opportunities for earning a fully online associates degree. At San Antonio College, faculty can only teach online courses if they have gone through a rigorous training process and complete an online certification with the college's Office of Technology.

Finally, a less common modality that is offered is hybrid, which is a combination of face-to-face and online instruction (Reed, 2020). Courses are designed specifically to have content delivered in multiple modalities. Hybrid courses allow students to complete some of the learning



requirements virtually and other requirements are done in a traditional face-to-face classroom environment. Students in those hybrid classes were already familiar with some aspects of online learning required by the March 2020 pandemic shift.

San Antonio College students have the choice as to which modality they prefer when enrolling each semester. The various modes of instruction are communicated in the registration descriptions, and faculty must adhere to the stated modality. Remote learning was not a listed modality option or a modality with which students or faculty were familiar prior to the pandemic. However, now that the college has experienced multiple semesters of remote learning, this modality has become quite familiar and possibly even preferred by some students.

Completing the spring 2020 semester was a tremendous hurdle for everyone involved in academia, and much was learned about the concept of remote learning during the emergency transition. As summer of 2020 began, the upcoming fall 2020 semester return to campus plans were unclear due to the developing and changing pandemic. Ultimately, the fall of 2020 and spring of 2021 were conducted remotely. Fortunately, emergency remote instruction had become a familiar process, and the lessons learned and tools used could be referenced for future academic planning.

### **Learning Challenges During the Pandemic**

To fully grasp the impacts thus far that COVID-19 has had on higher educational institutions, it is important to look at issues individually. Enrollment, learning, technology, mental health, child care, financial burdens, faculty struggles, academic integrity, and student performance are the areas that will be overviewed. The brief research in these sections is to provide a general sense of the challenges and initial findings thus far on these topics. The

information collected comes from national data, San Antonio College specific data, and a variety of higher educational institutions.

### ***Enrollment***

The National Student Clearinghouse Research Center (2021b) and The Office of Civil Rights (2021) publication titled “Education in a Pandemic: The Disparate Impacts of COVID-19 on America’s Students” reported a significant drop in community college enrollment in fall 2020. Specifically, 2-year colleges had a 10.6% decrease of enrollment of full-time students and a 9.9% decrease of part-time students from 2019 to 2020 (National Student Clearinghouse Research Center, 2021b).

Table 1, created by National Student Clearinghouse Research Center (2021a), details the enrollment decrease over 2 years. All of the educational institutions considered in Table 1 experienced an enrollment decrease except for 4-year private institutions. Two-year colleges, which include community colleges, suffered the greatest loss of enrollment. Data indicate that 2-year colleges were already on the decrease in fall 2019, but fall 2020 saw the largest decrease.

**Table 1**

*Estimated National Enrollment by Institutional Sector and Enrollment Intensity: 2019 to 2020*

	Enrollment Intensity	Fall 2020 Enrollment	% Change from 2019	Fall 2019 Enrollment	% Change from 2018
Public 4-year	Full-time	5,902,439	-.08%	5,947,219	-.08%
Public 4-year	Part-Time	2,101,921	2.9%	2,042,764	-2.4%
Public 2-year	Full-time	1,823,674	-10.6%	2,039,841	-1.1%
Public 2-year	Part-Time	3,000,529	-9.9%	3,328,629	-1.6%

Note: Adapted from “Current Term Enrollment Estimates: Fall 2020,” by National Student Clearinghouse Research Center, 2021a, p. 8.

San Antonio College enrollment was not representative of the national trend to the same extent. Figure 1 shows San Antonio College enrollment.

**Figure 1**

*San Antonio College Fall Enrollment Data*

Semester	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020
All	19,028	19,385	17,573	19,499	19,231
Female	11,126 58.5%	11,373 58.7%	10,542 60.0%	11,959 61.3%	12,178 63.3%
Male	7,902 41.5%	8,012 41.3%	7,031 40.0%	7,540 38.7%	7,053 36.7%
Hispanic	11,611 61.0%	11,776 60.7%	10,885 61.9%	12,253 62.8%	12,367 64.3%
African American	1,269 6.7%	1,401 7.2%	1,232 7.0%	1,371 7.0%	1,669 8.7%
Asian	521 2.7%	554 2.9%	509 2.9%	540 2.8%	537 2.8%
White	4,770 25.1%	4,809 24.8%	4,180 23.8%	4,462 22.9%	4,188 21.8%
Multi-racial	597 3.1%	626 3.2%	560 3.2%	664 3.4%	324 1.7%
International	166 0.9%	133 0.7%	120 0.7%	29 0.1%	73 0.4%
AI/NA, NH/OPI	70 0.4%	81 0.4%	66 0.4%	87 0.4%	73 0.4%
Academic	14,255 74.9%	14,475 74.7%	12,626 71.8%	14,063 72.1%	13,196 68.6%
Technical	4,773 25.1%	4,910 25.3%	4,947 28.2%	5,436 27.9%	6,035 31.4%
Semester	Spring 2017	Spring 2018	Spring 2019	Spring 2020	Spring 2021
All	18,240	18,571	16,348	18,463	17,528
Semester	Summer 2017	Summer 2018	Summer 2019	Summer 2020	Summer 2021
All	8,778	8,559	7,631	8,927	6,988

AI/NA: American Indian or Native American.

NH/OPI: Native Hawaiian or Other Pacific Islander

Please read all named Race Groups as Non-Hispanic

Note: From “SAC At-A-Glance,” by San Antonio College Institutional Research, 2020. (San Antonio College has granted permission to utilize data charts from the college website.)

The Figure 1 provides enrollment data from San Antonio College over the past 5 years. Since this population is the focus of this study, it is important to show a broader 5-year overview of enrollment in order to see evidence of a consistency. In 2020, the total enrollment did decrease but by 1.4 %, which is below the national data reported. The most notable decreases in enrollment from San Antonio College are the decrease in males, White, and multi-racial students. The National Student Clearinghouse Research Center (2021a) reported a national decrease of

14.7% of males and 6.8% of females at 2-year colleges. San Antonio College (2021) only experienced a 2% decrease of males, and female enrollment actually increased in fall 2020.

It is difficult to explain the exact reasons why San Antonio College experienced a lower enrollment decrease than the rest of the country. Perhaps students at the college were less impacted by the pandemic. Or, maybe San Antonio College's response to student needs during the pandemic might have enabled enrollment to remain steady. That information is not discussed or analyzed in detail in this study but could serve as a topic for future research.

### ***Technology***

In order for remote learning to be possible, technology is a necessity. Students and faculty must have access to working computers and reliable Internet. As common as these tools are for some, they are not available to everyone. This creates the problem referred to as the "digital divide." Dennon's 2020 article states the following:

The digital divide refers to unequal access to computers and the internet due to socioeconomic and geographic barriers. Across the world, the digital divide is felt most by minorities, women, and the elderly. Individuals without reliable, high-speed internet at home benefit from fewer educational and economic opportunities. (para. 3)

Because of this reality, students might need courses offered in the face-to-face modality and be forced to complete their homework on campus where there is working Internet. Prior to the pandemic, those students without access to home Internet often relied on public libraries or their places of employment (Dennon, 2021). Those opportunities for students to use other locations for Internet were not as easy to access during the pandemic. Therefore, when the remote switch occurred in spring 2020, students without personal computers or reliable home Internet service faced a significant disadvantage in their ability to learn (Richards et al., 2021).

Katz et al. (2021) also published an article describing shortcomings around digital inequity and remote learning proficiency levels. The publication addressed fundamental issues

with remote learning, including the inability to be successful without the necessary technology and technological skill level. Imagine students having a Zoom link sent to their student e-mails but having no way of opening that e-mail or logging into Zoom because they do not own a device that has Internet connection. Goldberg (Office of Civil Rights, 2021) explained, “students of color struggled with the transition to remote learning with inadequate technology that made it difficult for them to get online.”

Aside from a working computer, a strong and stable Internet connection is equally important. Imagine having multiple family members trying to share devices and low-speed Internet all at the same time. Paulo, a student at California State University, Dominguez Hills, shared that she missed classes and fell behind on coursework because she had to share the Internet with her siblings, which led to connection issues (California Student Journalism Corps, 2020). Internet and bandwidth proved to be most challenging for low socioeconomic areas (Pokhrel & Chhetri, 2021), which limited access for students in those areas. A *Washington Post* article written by Long and Douglas-Gabriel (2020) explained another story of a student who attempted to access Wi-Fi from a local fast-food restaurant to attend remote courses but continually got booted off because the server was insecure. Those situations made consistent attendance, participation, and engagement difficult. Many students who did not have access to stable Internet ended up dropping out of their courses (Long & Douglas-Gabriel, 2020).

### ***Learning Remotely***

The switch to remote learning presented challenges with learning (Ali, 2020). Students who were once in a classroom with peers and their instructor were now forced to learn through a computer screen. That impacted various aspects of learning including the ability to communicate. Conversations that once occurred in the hallways before instructors unlocked doors to

classrooms or inside the classrooms before or after the class time were no longer able to occur. Flores, a college freshman, said she experienced depression due to lack of opportunities to talk with her peers and instructors (California Student Journalism Corps, 2020). The article, “From Crisis to Recovery,” discussed that high levels of isolation impacted student performance (State Higher Education Executive Officers Association, 2021).

As a faculty member, I have witnessed student relationships and comradery develop in those moments around instruction. Students could ask each other questions about assignments, seek clarification about an upcoming project, or even vent about their frustrations. The unplanned communication exchanges that once occurred inside campus buildings were difficult to create in the remote classrooms (Burke, 2021). In transitioning from face-to-face to remote classes, Erika MacKenzie (2021) shared that her Zoom courses made her learning experience isolating because she was unable to have the exchanges with her classmates on campus as she once had enjoyed doing.

Also, the remote classroom limitations make it difficult to identify struggling students (Terada, 2020). Imagine an instructor looking at 28 different boxes with different faces, but the instructor cannot see them all at the same time. Or the camera may not be on at all, which inhibits the nonverbal communication that once was so helpful for faculty. Also, facial expressions, head nods, and vocal cues are not as easily noticed as they are in a face-to-face setting, so it is more difficult to determine if students are grasping material (Terada, 2020). Therefore, faculty struggle to identify and adjust as easily in a remote class as they previously did in the traditional classroom setting.

Since the initial transition to remote learning was reactionary to the pandemic and happened rapidly, plans were not in place as to how modifications would be created to best serve

students with learning disabilities. Gin, Guerrero, Brownell, and Cooper (2021) conducted a survey among students with disabilities and found several of the needed accommodations were not met in the remote learning environment as they were in the face-to-face courses. Specifically, they found that students did not have access to needed testing centers, extended time on exams, note taking accommodations, and access to tutoring (Gin et al., 2021). Faculty, even if they were aware of the students' needs, sometimes struggled to properly modify and adjust to best serve those needs (Gin et al., 2021). There simply was neither time nor training to create an instructional environment to best support those students. Accommodating students with learning disabilities and other specific needs must be improved if remote learning is going to continue (Pokhrel & Chhetri, 2021).

### ***Mental Health***

Increased mental health challenges among college students is another concern brought on by remote learning. An article titled "The Deteriorating Mental Health of U.S. College Students: Part I" stated that 40% of college students had feelings of depression (Imagine America Foundation, 2020). Those feelings increased due to the pandemic, and students were also suffering from emotional stress (Pokhrel & Chhetri, 2021), which prevented them from focusing on course requirements.

As a faculty member, I can confirm students were absolutely struggling with mental health concerns. In the emergency remote transition in spring 2020, the fear of COVID-19 overwhelmed many of my students, and oftentimes, I felt the need to stop instruction to do a check in and confirm everyone was doing well. Students wanted to talk about the state of the virus and to make sure their classmates were mentally and physically healthy. The unknowns of the virus were the initial struggles, but as time went on, I noticed students sharing their stories of

loneliness and isolation. I found it difficult to experience as a faculty member with few resources and similar feelings of confusion and fear.

In a separate article about student mental health and remote learning, Anderson (2020) stated that anxiety, loneliness, and depression were all concerns arising in students who had not previously experienced mental health issues. Students with existing mental health needs were struggling to get help due to campus closures (Anderson, 2020). Thankfully, many institutions developed ways to offer virtual services such as counseling for those students. The article “From Crisis to Recovery” stated “Institutions should capitalize on this innovation and ensure that online support service options remain available after the pandemic” (New America & SHEEO, 2021, p. 26).

### ***Financial Burdens***

Financial insecurity, how students were going to pay tuition, job loss, homelessness, and food insecurity were also reported in fall 2020 as top concerns during the COVID-19 pandemic (Office of Civil Rights, 2021; Neuwirth et al., 2020). The Baker-Smith et al. (2020) published a report stating that students who had jobs at their colleges and universities were cut because of campus closures. Other students experienced a cut in hours or total job loss if they were employed within the hospitality business (Baker-Smith et al., 2020). In other words, there were no more shifts because those schools and businesses were closed.

A study published in 2020 by Baker-Smith et al. found that 42% of students experienced a reduction or total loss of their part-time jobs, and 31% experienced a reduction or total loss of their full-time jobs. This information explains what many students were experiencing during the pandemic. The lack of income from their jobs created a financial insecurity. When students



struggle to pay for necessities, such food and rent, it is hard to expect them to focus on their commitments as students.

### *Childcare*

Many students not only were trying to navigate remote learning through that difficult time but also became caregivers of their family members (Furman & Moldwin, 2021). Taralina Paulo, a student at California State University, Dominguez Hills, shared that she missed classes and fell behind on coursework because she had to care for her 8 siblings (California Student Journalism Corps, 2020). Because San Antonio College is a community college, many of the students live at home with their families. Within those families were siblings who no longer were able to go to school or daycare. Families, including students, struggled to manage the childcare duties, remote schooling, working from home, and navigating all that was required to be successful in those unfamiliar virtual settings.

Baker-Smith et al. (2020) reported that 78% of student parents had to provide educational support for their children while the students tried to attend classes. Several of my students were in the same situation. Their children were trying to attend virtual classrooms at their elementary, middle, or high schools, while simultaneously their parents were attending online college courses.

As a parent who had elementary children at home in various forms of virtual learning during the pandemic, I can attest to the additional workload it created. I played the role of full-time worker, mom, homework monitor, instructional supporter, tech supporter, and, of course, provider of the usual household duties. I cannot imagine how overwhelming it was for the student parents taking remote college classes. Chung et al. (2021) shared the story of a college student mother who put her children's academic needs before her own coursework:

The Ross home is a constant hub of online school activity, attempting to support every level of education from elementary school to high school to university, to accommodate Ross and her three children, ages 8, 9 and 16. Sometimes to get the kids through school, Ross must give up her laptop to her children so they can finish their work. (para. 7)

### ***Faculty Struggles***

Navigating the student-teacher relationship was challenging in a remote classroom. Short conversations and time for questions was not as easy to facilitate as it previously had been. During the remote learning transition, faculty realized they missed the simple exchanges they had had with students before and after class on campus (Furman & Moldwin, 2021). These exchanges help faculty get to know their students and their needs. Students who are engaged with their faculty members are more likely to remain in the courses and be successful (Northern, 2020).

Faculty also found it challenging to navigate through their students' struggles during the pandemic (Furman & Moldwin, 2021; Neuwirth et al., 2020). For example, some of the issues shared by students included testing positive for COVID-19, losing their jobs, or being unable to focus during class time due to their children now being at home. It was completely new for faculty members to be faced with such heavy issues. The Chronicle of Higher Education reported that one third of faculty considered leaving the profession, 50% of faculty reported a decrease of enjoyment of teaching, and 69% reported high stress levels (Tugend, 2020).

In addition to the high stress levels and concern over their students, faculty were literally relearning their jobs as they were performing them. The process could be compared to driving a car blindfolded. Prior to the pandemic, many faculty had little or no experience in online instruction. In trying to transition from face-to-face classes to unfamiliar platforms, faculty suffered significant amounts of mental exhaustion from the emotional stress of that new

environment (Furman & Moldwin, 2021; Tugend, 2020). Faculty lives were disrupted because their jobs continued but none of their tools were the same. Learning to effectively use Zoom or other virtual meeting platforms takes time, and time was not afforded to faculty (de Vries, 2021).

### **Academic Integrity**

The integrity of student work created a greater challenge when face-to-face courses transitioned to remote settings. Students had more opportunity to cheat in a remote setting (Gonzalez et al., 2020). Educators were concerned with monitoring testing and assessment procedures in remote instruction with the same oversight that would have occurred in face-to-face courses. Pokhrel and Chhetri (2021) also discussed the challenge of examinations and identified an additional issue of plagiarism. Subin (2021) published an article on CNBC stating Texas A&M University and Boston University found students committing academic fraud by using websites that enabled them to find test answers. Faculty who are more experienced with online instruction are familiar with various tools that ensure students are submitting original work and often assign assessments that limit opportunities to cheat (Subin, 2021). However, the quick transition to remote learning left little time for faculty who were less familiar with online instruction to implement those tools to monitor originality of student work.

### ***Student Performance***

One might assume based on all the previous challenges mentioned that students performed poorly during the remote courses. Overall, student performance improved during the COVID-19 pandemic (Furman & Moldwin, 2021; Gonzalez et al., 2020). It is, however, hard to have exact performance comparisons between previous courses and courses that adjusted instruction due to COVID-19. Assessment practices and assignments might have been altered due to limitations of modality and instructor skill level with technology. It is difficult to

determine if instructors could have eliminated or revised assignment expectations. Therefore, only a broad assumption can be made based on student success data rather than exact comparisons between the two semesters (Gonzalez et al., 2020).

Several articles have been published during 2021 reviewing the switch to virtual learning modalities. The articles, however, do not provide specific data on productive grade rate and retention for first time in college students, which indicates a gap in research. However, some data have been published on student grade point averages. California State Fullerton compared fall 2019 to fall 2020 grade point average (GPA) data and reported their student population GPA had improved over the last year (Orleans, 2021). Specifically, the incoming freshman GPA increased by 4.1% (Orleans, 2021).

### ***Gender***

Prowse et al. (2021) conducted a survey among undergraduate students. Their study found that females struggled more than males with mental health due to the pandemic, but both genders felt their social relationships were negatively impacted. The results also indicated a mixed response on whether or not the pandemic negatively impacted their academic performance (Prowse et al., 2021). In a different study, both males and females reported that they found the learning outcomes to be similar regardless of the learning modality (Yu, 2021). Hsiao (2021), however, found that academic performance was different between males and females in the various learning modalities. The study, which included 18,085 students, found that women demonstrated no significant difference between the online or face-to-face modalities, but men performed stronger in face-to-face courses rather than online (Hsiao, 2021). Additional research is needed on academic performance by gender in the remote modality.

## **San Antonio College Pandemic Response**

Because of the state of the pandemic during fall 2020, students returned or enrolled in San Antonio College without the option of a traditional face-to-face on-campus experience. That was unfortunate because many students enrolled in courses that were scheduled to take place in person rather than in a remote modality. Remote sections were offered in place of almost all face-to-face courses. Students were given the choice to enroll in remote (synchronous online) or online (asynchronous) courses. Those included the first-time college students.

Although this was not the ideal start to a new academic year, the college was prepared and had overcome many of the challenges experienced during the emergency spring 2020 learning transition. The college was now able to provide students with loaner laptops and Internet hotspots, and many student services were becoming accessible virtually through Zoom appointments. Faculty were better prepared by the many Zoom workshops offered including strategies on how to effectively utilize tools such as breakout rooms to create a more collaborative and engaging classroom. Also, in order to be more streamlined and cohesive, a Canvas remote course layout was designed and required for faculty to implement in each remote course they taught. That layout had resources for students, technology assistance, and a chronological format for faculty to import course materials in a student-friendly manner.

Remote teaching and learning became a more familiar concept at San Antonio College that faculty and students could embrace, and perhaps, even enjoy. Faculty and students had already gone through the learn-as-you-go survival mentality from the previous spring semester. There was a much clearer picture of what learning was going to look like in fall 2020. In short, San Antonio College was more prepared to tackle remote learning at the start of the fall 2020

semester than the previous emergency remote transition of spring 2020. Even with that preparedness, faculty, administrators, and staff experienced challenges.

### **Purpose of the Study**

The purpose of this study is to compare student success in face-to-face courses versus remote learning for first time in college students at San Antonio College. San Antonio College has allowed me to use student success data for this dissertation. Student success is the combination of productive grade rate and retention. Productive grade rate is calculated by each listed course per academic semester and is made of the percentage of students who earn a letter grade of an A, B, or C in a course. For example, if there were 10 students in a class and 7 students received an A, B, or C and the other 3 students received an F, the productive grade rate for that course would be 70%. Retention is the percentage of students who remain in a course once rosters are finalized. For example, if there were 10 students in a course and 2 students requested to withdraw, the retention percentage for that course would be 80%. It is important to mention that retention is not based on successful completion, rather it is calculated by the number of students who remain in the course until the end and do not request a withdraw. Productive grade rate and retention are used to analyze each San Antonio College course student success data. These data help faculty, administrators, and staff determine in which courses students are successful or unsuccessful and help illustrate patterns among courses.

Student success data had not been compared at San Antonio College between face-to-face and remote classes prior to the pandemic because the remote courses did not exist. The purpose of this new study is to compare the fall 2019 16-week full semester first time in college student success in face-to-face courses to the fall 2020 16-week full semester first time in college student success in remote courses at San Antonio College. If my results suggest student success is

stronger in remote courses than in face-to-face sessions, San Antonio College administrators might consider the remote modality as a needed option in the future college course schedules. In that case, students would have the opportunity to earn college credits remotely just as they have previously done in person and online. The findings from this study could also serve as a hypothesis for other educational institutions regarding the student success in face-to-face and remote courses.

### **Key Concepts**

All concepts overviewed in this section are defined by the way in which San Antonio College uses these terms and the way in which they will be used in this study.

Student success data. Student success data includes productive grade rate and retention.

Productive grade rate. Productive grade rate is the percentage of students who earn an A, B, or C in a course.

Retention. Retention is the percentage of students who are on a course roster after the census date and complete the course regardless of letter grade.

Instructional and learning modalities. The three instructional and learning modalities that are mentioned in this study are face-to-face, online, and remote.

Face-to-face learning. Face-to-face learning is a synchronous learning modality with scheduled on-campus meetings. Students are required to attend these courses in person.

Online learning. Online learning courses are offered 100% asynchronously, and no scheduled meetings or on-campus visits are required.

Remote learning. Remote learning is an online synchronous learning modality currently offered as a substitute to a traditional face-to-face campus course. Faculty use Zoom or a similar virtual platform to meet students live for their scheduled classes. Students attend classes by

logging on to Zoom for each scheduled meeting and are required to use a working web camera and microphone to engage and participate just as they would in a face-to-face learning environment.

First time in college. First time in college students are students who are enrolled in college for the first time and in their first 15 hours of course work (San Antonio College, 2016).

First time in college courses used for this study. Based on my experience as a faculty member and advisor to majors in my discipline, I have identified three courses at San Antonio College that have a large population of first time in college students. These courses are SPCH 1311, Introduction to Speech Communication; ENGL 1301, Composition I; and finally, HIST 1301, United States History I.

Census date. Census date is a date assigned to each academic term that allows a student to drop or be dropped from courses without it appearing on his/her academic transcript (San Antonio College, 2021). In fact, a drop before the census date acts as if the student was never in the course. Any student remaining in the course after census counts toward the student success data.

## **Research Questions**

### ***Primary Research Question***

Were the productive grade rate and retention percentages in the 16-week fall 2020 remote learning first time in college courses (History 1301, Speech 1311, and English 1301) greater than productive grade rate and retention percentages in the 16-week fall 2019 face-to-face first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College?



### ***Secondary Research Question***

Were gender, first generation status, economic status, veteran status, and modality type predictors of productive grade rate or retention in the fall 2019 and fall 2020 semesters first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College?

### ***Null Hypothesis***

Gender, first generation status, economic status, veteran status, and modality were not predictors of productive grade rate or retention in the fall 2019 and fall 2020 semesters first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College.

### **Significance of the Study**

This study on student success in remote instruction is providing information to fill in a gap in research. My pilot study conducted in fall 2020 analyzing the spring 2020 transition to remote instruction suggested students can be more successful in remote courses. This subsequent study is necessary to further investigate that initial finding. This information has the potential to permanently change the way courses are offered.

Before spring 2020, the two most common options for attending courses were the traditional face-to-face course meetings, which weekly for a 16-week semester, or the option of enrolling in fully asynchronous online courses. Those two differing options met the diverse needs of students. A synchronous course has set meeting times, whereas an asynchronous course allows students to log into courses as it best fits their schedules. Some students prefer the routine of an on-campus class and enjoy the more engaging learning environment of a synchronous class. Other students need the flexibility of online courses and can successfully work independently on their assignments through asynchronous online courses. Research indicates that

student success is stronger in face-to-face course options than online courses (Korstange, et al., 2020), but little research has been done to determine student success in remote courses.

Although remote learning is done online and comes with flexibility in the learning environment, the modality shares many of the same characteristics of face-to-face courses. Students have specific days and times they must attend the course, but their context can be extremely flexible. For example, a working adult can attend a class from their office during a lunch break. An adult without transportation but with the desire for a collaborative classroom can still participate remotely. A parent can find an area away from childcare duties and log in for the scheduled class meeting. Lastly, an individual with health limitations can still earn a college degree without sacrificing needs for classroom engagement. The ability to hop in and out of instruction saves the tremendous time and effort that would be required to physically be on campus.

It is also important to mention that these data are significant for the first time in college population as they are entering into higher education without prior experience in collegiate-level courses. A common misconception about a first time in college student and certainly first time in college community college students is they are all entering college directly from high school. In my experience with San Antonio College student demographics, I can confirm that the first time in college population is a diverse mix of adults of all ages, ethnicities, and genders. This population warrants not only the need to analyze student success data in the remote courses but to also include an analysis using additional student demographic variables as mentioned in the secondary research question.

### ***Intended Audience***

The intended audience is higher education administrators and key decision makers such as department chairs, program coordinators, and academic advisors who create and plan course schedules. These individuals need to know if remote instruction is a successful learning modality option for their students.

A second intended audience is individuals working with first time in college students such as academic advisors or incoming student orientation staff. The Center of Community College Student Engagement (2018) reported that 73% of first time in college students worked with an advisor before creating a class schedule. Those advisors had a tremendous ability to influence and guide students down a path so they would achieve the most success. The Center of Community College Student Engagement (2018) also stated, “Advisors analyze student retention data and use the findings to identify actions the college can take to improve overall student outcome.” Hence, advisors will play a direct role in communicating the results of this study and implementing a long-term change for students when designing academic schedules.

Higher education is an industry that is mindful of consumers (Stoller, 2014). If remote learning is a way that students are successful in classes and places them on the road to degree completion, these stakeholders will have a vested interest in the results of this study. Students and faculty will also benefit from any indicators of a modality that is prohibiting or supporting student success.

### **Personal Background**

I am an assistant professor and program coordinator of speech communication at San Antonio College, a community college in San Antonio, Texas, and the research site for this study. In my 17 years as an educator, I have overcome challenges such as floods, hurricanes,

winter storms, and even the threat of the 2009 H1N1 pandemic. None of those events required a total instructional pivot like the COVID-19 pandemic.

When the campuses shifted to emergency remote learning, I faced the challenge as both a faculty member teaching multiple face-to-face courses and as a coordinator concerned about how to facilitate this transition with the faculty in my discipline. As a faculty member, I was worried about my students. Were they or their families going to get sick? Did they lose their jobs due to the pandemic? Lastly, how would I be able to connect with them in the same way as I did in the classroom? I must admit my concern of their academic performance and student success came second to my concern for their physical, emotional, and mental health.

Aside from teaching multiple face-to-face courses, I have about 10 years of experience teaching online courses. In those courses, I have different approaches to create an engaging and collaborative virtual classroom. That experience and knowledge allowed me to quickly transition much of my content to a remote format. However, I had never instructed courses using Zoom, which was a significant learning curve.

In my role as coordinator, I managed several aspects of the program including advising, planning courses, hiring, training new faculty, and building schedules. I also analyzed student success data for all our speech courses and ensured students were meeting the necessary learning outcomes. That role left me with a different set of concerns. How was I going to lead the discipline through that change with varying technological skill levels of the faculty? How was I going to ensure faculty were providing the same level of instruction as they did inside our campus classrooms? The scariest question of all, was anyone going to get that unpredictable and possibly life-threatening virus?

The lower-level administrator position, in addition to my being a seasoned faculty member, provided me a lens to the roller coaster on which we have been in higher education since March 2020. This experience has helped in supporting the research and analyses in this study.

### **Theoretical Framework**

The theoretical framework for this study was developed by Knowles' (1975) self-directed learning (SDL) theory and Tinto's (2019) model of motivation and persistence theory. SDL occurs when students take the lead in their academic development and can identify necessary changes and adjust to best suit their individual needs (Knowles, 1975). The model of motivation and persistence theory describes five key components that impact student retention (Tinto, 2019). The two components of the model that will be the focus in this study are self-efficacy and sense of belonging. These theories in correlation to remote learning and additional relevant literature to this study will be discussed further in chapter 2.

## **Chapter 2: Literature Review**

During the fall 2020 semester, I conducted an informal pilot study comparing student success data (productive grade rate and retention) at San Antonio College. This area of interest was prompted by the impact of COVID-19 and my concern about student success. I was curious how students performed during the remote transition since that modality was probably unfamiliar. Also, because of the pandemic, the timeframe of returning to campus was uncertain. I wanted to research if remote learning was hindering student success or if it was a sustainable option.

The pilot study included three face-to-face courses in spring 2019 and the same three courses that transitioned to remote learning during the middle of spring 2020. The study compared two different populations taking the same courses but in different modalities and semesters. Productive grade rates and retention were averaged and compared. The semester with the higher average of the two items was spring 2020. Those results suggested more students earned an A, B, or C and completed the remote learning courses than in the traditional face-to-face instruction. All findings were analyzed using descriptive statistics in SPSS.

It is important to mention that the student success data used in the pilot study from spring 2020 was confounded by some issues because the semester was conducted using a combination of face-to-face instruction and emergency remote instruction. I use the term emergency remote instruction to highlight the lack of preparation or understanding by faculty and students of this instructional method. It was simply a quick learn-as-you-go transition. However, the fall 2020 courses were designed with remote instruction in mind. Therefore, at least an entire semester of remote instruction must be analyzed to determine if the results are consistent. Also, this

dissertation will use additional variables such as gender to take a more in-depth look at student success in the face-to-face versus remote modalities.

Literature overviewing the remote transition and student success in remote learning will be discussed in this chapter. Also, a theory, self-directed learning, will be explained and how it supports the initial findings and the need for further investigation of student success in the remote transition. Belonging and self-efficacy will also be used to compare the findings of the pilot study and research questions of this study. These concepts are used in education and are applicable to the impact COVID-19 has had on the modality shift and student response.

### **Self-Directed Learning**

Self-directed learning (SDL) occurs when students take ownership of their learning process, determine their needs, and make adjustments to optimize growth (Knowles, 1975). In other words, in SDL, students are the leading drivers in their education. If there is an issue, such as a lack of understanding of a concept, SDL encourages the students to do further reading and to seek opportunities to expand their knowledge. The theory was chosen as a basis for this study because I wanted to further investigate the importance and application of SDL skills and to apply them to the remote learning modality.

Petro (2017), Robinson and Persky (2020), and Schiller (2020) explained that SDL required students to take ownership over their learning process by seeking the necessary tools to make them successful in a class. Those tools could include tutoring centers, using a different calculator, or perhaps, a switch in a course learning modality that best fits a particular learner's needs. SDL is an important skill for college students. Schiller (2020), a director of academic support at Metropolitan College of New York, discussed the importance of SDL and helped students understand that SDL gave learners power in their education. SDL is often new for

students who were not encouraged to engage in their learning process prior to college. Therefore, learning to be a college student can be a challenging transition.

As a faculty member, I have experienced this challenge with many students and have seen them struggle with basic course policies and due dates. Oftentimes, students who lack SDL will send frequent e-mails looking for reassurance on basic assignment instructions without taking the initiative to find the answers in the syllabus or other provided materials. At San Antonio College, I have noticed a lack of SDL equally in face-to-face and online students. In contrast, in Khalid et al.'s (2020) study comparing SDL in traditional face-to-face and online students found that online students had higher levels of SDL.

Schiller (2020) emphasized to students that SDL did not mean that students were alone in their learning process, and educational professionals were still there to support them in their courses. He stressed that there needed to be a stronger pull from the individual students. SDL allows for a shift in the relationship between students and faculty members. Specifically, SDL permits faculty members to serve more as facilitators and encourages more autonomous learners (Robinson & Persky, 2020).

SDL is a skill that several higher educational institutions are trying to develop within their students. The University of Waterloo's Teaching Centre for Excellence (2020) in Waterloo, Canada, developed a four-step process to help facilitate and cultivate those needed skills. Access readiness to learn, set learning goals, engage in the learning process, and lastly, evaluate learning were the four steps discussed to encourage SDL in students (Teaching Center for Excellence, 2020). The University of Denver (2019) and Baylor University (n.d.) in Texas also have websites dedicated to the topic of SDL and the importance of these skills in the success of their students. Wilcox (1996), a professor from MIT, shared her experience with SDL stating that it promoted



engagement in all parts of learning, encouraged students to take responsibility, and steered away from the perception that students were customers in the classroom.

Prior to the emergency remote shift in 2020, studies were also done on SDL in the various learning modalities. Geng et al. (2019) found that online course technologies were more easily embraced by students who were highly self-directed. Students were able to adjust to the technology demands of their courses because they were independently able to problem solve. Geng et al. (2019) also stated that technology should be incorporated into face-to-face modalities to increase students' skillsets. Faculty could do that by using the college's LMS tools. Those tools allowed faculty to share course content such as notes, post announcements and videos, and keep a current gradebook so students could always be up to date with their progress. That strong use of technology approach would improve student learning motivation and abilities of SDL (Geng et al., 2019). Students would have the ability to reference content they did not understand by reviewing the available course notes, confirm they were progressing as they desired in the course by referencing the virtual gradebook, and engage more freely than they would without the use of the LMS. A faculty member and the amount they utilize their college's LMS could impact student success regardless of the course modality. This could serve topic for a future study since utilization of LMS is not a variable in this dissertation.

### **Self-Directed Learning in Remote Learning**

As mentioned, higher education wants learners to have SDL skills, and remote learning intensifies that need.

Given the recent developments brought about by the COVID19 pandemic – that is, the introduction of remote teaching and learning as the new norm in many countries – self-directedness in students is tested, and it is one skill that can help students thrive in their academic progress and development during this pandemic. (Mahlaba, 2020, p. 124)

Giddings (2014) discussed that the first step of SDL was the need for students to assess their skill level in order to identify their needs. In the case of remote learning, students needed to determine their ability with their college's LMS, the technology required for the remote transition, and their ability to use said technology, the strength of their Internet, a quiet place to log in to classes, and their ability to use whichever other virtual learning tools their college required to complete the course. Remote learning could not begin for students without this initial reflection, and although educational institutions might have offered support, this first step is independent (Alghamdi, 2021).

At San Antonio College, communication was frequently sent out on how to become remote ready. The college provided tips on necessary tools, trainings provided for both faculty and students on how to use Canvas and zoom, and technology support. Those, in addition to the lending of laptops and providing Internet hot spots, potentially put students at San Antonio College in a better position than others to perform well in that remote setting. The proactive response of San Antonio College possibly had a great impact on the findings of this study.

The results of the previously mentioned pilot study possibly indicated that students practiced SDL, because a high number of students maneuvered through remote learning and successfully completed the semester despite the switch of learning modality. Several other possibilities exist as to why students successfully completed the semester, and those variables are not considered in this study. I speculate that students practiced SDL, which required them to independently seek out necessary tools in order to maintain focus on their educational goals. Although some students were more prepared than others, the March 2020 modality switch and the following academic semester provided learners the opportunity to practice SDL by

independently reading directions, troubleshooting, and submitting assignments on their own. This opportunity to take an active SDL role occurred because of the unfamiliar transition.

From my personal experience with the remote transition, students, regardless of their level of SDL, were already invested in the course when the shift occurred. They had put time and effort into assignments and course requirements. Or, students might have remained in the courses due to a graduation deadline or financial aid enrollment requirement. I believe those who possessed lower levels of SDL were motivated to increase their SDL because they had a significant investment in the course. After examination of the literature, there were no published studies on the comparison of SDL in two-year to four-year higher educational institutions. Therefore, the studies mentioned are a broad overview of SDL findings in undergraduate students.

Alghamdi (2021) published a study on SDL of undergraduate students during the pandemic and shared that students “would not be able to succeed academically unless they came to grips with self-directed learning” (p. 9). Adults have specific goals and expectations in the classroom that are created by their experiences and world around them (Johnson, 2013). Because of the pandemic, classrooms changed tremendously. Students who previously had little need or desire to obtain virtual communication skills, such as learning how to use Zoom, were now forced to embrace those technological tools. All around the world, basic human interaction, including many workplace events, became virtual (Anderson et al., 2021). Students’ worldview was completely altered and their need to be successful in a remote environment became greater than ever before. This is an excellent example of SDL because students identified a need based on their current situations and set out to fill that knowledge gap by embracing and participating in remote learning (Knechtelsdorfer, 2021).

Akbar et al. (2017) and Khalid et al. (2020) found that students with SDL skills had better academic performance. Akbar et al. (2017) also found that students who possessed intrinsic motivation had higher performance. Intrinsic motivation in an educational setting happens when students feel joy from their learning development and are not only focused on the reward or grade (Mulvahill, 2018). In other words, intrinsically motivated students are personally invested in learning because there is true gratification rather than completing the assignments in order to pass a course. Motivation is also often associated with the theory of SDL and the analysis of student performance (Akbar et al., 2017). Gonzalez et al. (2020) reported that during the pandemic students found different motivations to be successful in courses even though they were isolated from peers. Some students did not want to miss a year of learning, and others worked harder because of the unfamiliar learning format.

### **Self-Efficacy and Self-Belonging**

Because of the general profile of community college students, the primary collaboration with their peers and instructors happens inside the classroom (Chaves, 2006). Although this citation is older, an overview of the literature failed to provide an updated citation with regard to community college student engagement specifically in the classroom. Aside from the experience inside the classroom, engaging with peers on campus in clubs or learning communities develops a sense of connection and commitment to one's school (Turner, 2016), but these opportunities often occur in traditional face-to-face environments. Colleges and universities can create similar opportunities for engagement virtually. Tinto (2019) expanded on his 1975 student retention theory by creating a model of motivation and persistence that described key components that impacted student retention. The model of motivation and persistence was a more modernized approach to looking at student retention through the perspective of a student (2019). Only two of

the five components from the model of motivation and persistence will be correlated to the remote learning experience in this study. The components include self-efficacy and sense of belonging. These concepts were selected because they provide information as to what students needed for to be successful and to complete courses. The results of this study can be examined by components of this model since it focuses on student retention. Therefore, the number of students who completed a course might be due to a sense of belonging or a positive sense of self-efficacy.

Self-efficacy refers to students' beliefs that they can be successful (Tinto, 2019). This happens when students in a classroom embody feelings of prospering in relation to the learning outcomes rather than experience negative self-concepts of failure. Self-belonging is the feeling that student contributions are valued in a classroom (Tinto, 2019). The feelings of belonging are cultivated among peers and the student-teacher relationship (Allen et al., 2021; Strayhorn, 2018).

### ***Self-Efficacy***

Self-efficacy is an idea created by Bandura (1977) and is a belief people have about their ability to be successful in a particular situation. To further elaborate, people who have positive expectations of success, which is high self-efficacy, are likely to engage, whereas those with negative expectations of their success, low self-efficacy, will not engage (Bandura, 1977). The level of efficacy will also determine the efforts they put forth (Bandura, 1977). For example, students who have strong feelings of self-efficacy in a remote course might have stronger efforts than students who have low feelings of self-efficacy. This behavior will impact the students' success in a course. In another example, in a situation where students face an obstacle, the feelings of self-efficacy will impact their behavior. Students with strong feelings of self-efficacy work harder to find a solution, whereas students with low feelings of self-efficacy will give up.

Feelings of self-efficacy can impact students' success in a learning modality, and those feelings are framed by judgements of past experiences (Schunk, 1990). In the rapid transition to remote learning in March 2020, students who already felt they would be successful in the course would likely continue to be successful even in an unfamiliar modality. Students with high self-efficacy were also more likely to put forth more effort (Schunk, 1990) and try to find solutions to problems they encountered in the transition. On the opposite side, students who were already questioning their ability to be successful in courses might have felt the transition to remote learning hurt them even more. In fall 2020, when students were only given the option of enrolling in remote or online courses, their past experience with remote learning from March 2020 with those modalities framed their self-efficacy for the new semester. Aguilera-Hermida (2020) suggested that remote learning exposure might benefit student self-efficacy with future courses where online learning or technology was required. This is because students have already gone through the modality and possibly faced and worked through hurdles. Having that confidence and previous experience can create a positive self-efficacy.

Aldhahi et al. (2021) performed a study analyzing undergraduate student performance in remote learning and connections to self-efficacy in 22 different universities in Saudi Arabia. The study found familiarity with technology and high frequency of interaction with the instructor was related to positive feelings of self-efficacy (Aldhahi et al., 2021). Teacher presence also impacted student self-efficacy (Aldhahi et al., 2021; Schunk, 1990). In other words, students who felt their teacher was present in the classroom, had frequent interactions, and were confident with how to use the technological components of the course had positive feelings about their abilities to be successful. Alemany-Arrebola et al. (2020) who conducted a similar study surveying 427 undergraduate students from the University of Granada using a questionnaire on perceived

academic self-efficacy during remote learning found that student stress levels also impacted their self-efficacy. Specifically, those students who experienced pandemic-related stress were likely to have low levels of self-efficacy toward their courses. In a different student survey given to 22 different Saudi Arabian universities by Aldhahi et al. (2021) found student feelings toward courses was based on their academic averages, and students with higher GPAs were more likely to have stronger feelings of self-efficacy.

Ferguson (2021), who conducted a study to determine if student self-efficacy is influenced by relationships students had with campus faculty and staff, claimed colleges and universities had the opportunity to promote self-efficacy by providing students the needed support inside and outside the classroom. It was found that students were often passed around from office to office to get questions answered or were encouraged to go to tutoring rather than the faculty supporting instructional needs (Ferguson, 2021). Universities and colleges could stop this pattern by providing more staff training and promoting strong student-teacher relationships. This, in turn, would increase self-efficacy and retention (Ferguson, 2021).

As mentioned in the previous studies, self-efficacy is an important concept to use in this study because of the modality switch and the impact it had on students. Many of the students at San Antonio College had only one previous experience with remote learning with the spring 2020 transition. That isolated involvement impacted self-efficacy, and in turn, student success. The results of this study can be analyzed by this term.

### ***Self-Belonging***

According to Tinto (2019), self-belonging is a feeling that students have similar to feeling like they matter, their voices matter, and their participation matters. According to Maslow's (1943) hierarchy of needs, humans have the need of self-belonging. This need comes third on the

list after safety and physiological needs such as food and water. This need model is related to human motivation, and the theory explains that humans cannot achieve the highest level, self-actualization, without having their earlier and more basic needs met (McLeod, 2020). Kurt (2021) wrote an article that connects Maslow's hierarchy of needs to the role of a student and focused on the importance of belonging. For students, this need can be met by feeling valued in the classroom, participating in student groups, and seeking affirmation from the teacher (Kurt, 2021). Students will be more apt to succeed when the first four basic needs—self-esteem, sense of belonging, safety, and physiological—are met.

The article titled, “Academic Belonging,” found on the Massachusetts Institute of Technology faculty resource website, discussed why feelings of academic belonging were important and how faculty could achieve that by offering best practices (MIT Teaching + Learning Lab, n.d.). The article also explained that students were most successful in coursework when they felt valued in their academic settings. The article also suggested that self-belonging was important because students who felt they belonged possessed other feelings like respect, feeling cared for, and feelings of acceptance (MIT Teaching + Learning Lab, n.d.).

Strayhorn's (2018) book on student self-belonging with the focus on race, gender, sexual orientation, and the impact on academic achievement and retention claimed that academic success and persistence to the following semester were linked with feelings of belonging. Also, students with a high sense of self-belonging were more likely to engage in conversations with faculty and to attend tutoring (Hurtado & Carter, 1997). Williams (2003), whose article provided results on student engagement surveys, used the term engagement to associate students' participation and attitudes toward school activities. Williams (2003) went on to connect that engagement was necessary to establish students' feelings of belonging.



To promote self-belonging and to encourage interaction in a remote classroom, faculty can use breakout rooms (Brown et al., 2016). A breakout room is a virtual space in a remote classroom where a group can work together apart from an entire class. Instructors can create these and provide parameters such as time limits, chat features, and even pop in to offer assistance. This is the virtual way of moving table, desks, and chairs around in a traditional classroom for small groups to work together. The breakout rooms allow students to develop a relationship with peers by sharing concerns or asking questions in a private space. Chandler (2016) found that students were more comfortable asking questions in small groups rather in the larger virtual classroom with all students and that these breakout sessions promoted engagement and decreased boredom. Instructors also think these breakout rooms are a positive asset to their classroom because they have the opportunity to check in on students and to provide clarification or support in smaller group settings (Chandler, 2016).

McBrien et al. (2009) conducted a research study on synchronous online learning, which is another term for remote learning (Scheiderer, 2021). The focus of the study was to determine levels of social interaction in that modality and what impact the interactional levels had on the learning experience. McBrien et al. (2009) identified that students found the environment to be more interactional in comparison to face-to-face courses. McBrien et al. (2009) also suggested that students who were more introverted felt more comfortable expressing themselves because they could engage in class discussions by using the chat option and could construct a thoughtful written response rather than speaking on the spot. “Regardless of the tool used, it is important to establish a learning climate with risk-free expression, coupled with effective questioning skills to promote knowledge building and active participation in synchronous discussions” (Brown et al., 2016, p. 57). These interactions promote a strong self-belonging because students can seek

clarification, develop comradery, and see other students who are in similar situations persevering. Lemus, a college freshman, said she enjoyed making friends with her classmates via her remote class sessions held in Zoom and that there were opportunities to build relationships in that environment (California Student Journalism Corps, 2020). Based on the model of motivational persistence (Tinto, 2019), these feelings of self-belonging increase student retention, and therefore, have a positive impact of student success.

However, not all students engage as freely, and sometimes students opt to leave their cameras off, which prevents the instructor from monitoring engagement. McBrien et al.'s (2009) study on remote learning without the video live stream component mentioned some students felt more disconnected from their peers and instructor because they could not see them. Thankfully, recent technological advances have allowed students and faculty to see each other, but both parties must be willing to use the video option in order for lack of nonverbal communication not to become a barrier. Because of the recent nature of the remote transition, I was unable to find definitive research on student success and camera usage. However, my experience with remote learning indicated that students who had their cameras on were more engaged and had stronger academic performance. Adults are more active participants in their learning (Johnson, 2013), but this unfamiliar environment can be challenging for all.

### **First Time in College**

First time in college students are in the first 15 to 18 hours of their college coursework. This population is sensitive because of their unfamiliarity with the demands of college academic rigor and the stress and anxiety this new environment brings (Barnard, 2017). From personal experience, I can share that many first time in college students struggle with the skill of SDL if they were not required to apply those skills in the past. In the classroom, simple things like using

the syllabus or checking the course announcements might be more challenging for those who lack SDL. These hurdles can be too much for some students and can cause them to drop courses or even leave college altogether. Hanson (2021) reported in his study that the total dropout rate for undergraduate students was 40%, and college freshmen, which included first time in college students, made up 30% of that. This information indicates that this population is potentially at risk for dropping out.

I chose to focus on first time in college students because they are a population at risk of dropping out. Therefore, their success is important to educational institutions. Colleges need to know where their students can be most successful and to help guide them to those appropriate modalities. If the results indicate remote learning is a modality in which first time in college students are more successful, then colleges might create more courses in that modality. In contrast, those courses might not be ideal for this population and might be limited to these students. Either way, this study's information is equally valuable.

Table 2 shows San Antonio College's (2021) publicly reported persistence of first time in college students on the college website. The persistence data were the number of first time in college students who continued on to a second semester. The data were split into three sections. One section reported persistence of full-time students (students enrolled in 12 or more credit hours), a second section reported part-time students (students enrolled in less than 12 credit hours), and the third section was a combination of all full- and part-time students. Fall semester to spring semester persistence was highest for full-time first time in college students, ranging from 82.3% to 83.7% from 2017–2020 (San Antonio College, 2021). Part-time students' persistence was lower, ranging from 53.8% to 59.5% in the same years (San Antonio College, 2021). The data help demonstrate the persistence of first time in college students at San Antonio

College. The persistence data are also interesting because no semesters impacted by the remote transition or remote modality are included.

**Table 2**

*San Antonio College Fall to Spring First Time in College Persistence*

Fall to Spring	Fall 2017 to Spring 2018	Fall 2018 to Spring 2019	Fall 2019 to Spring 2020
FTIC full-time	82.3% 678/824	84.0% 816/972	83.7% 1,286/1,536
FTIC part-time	59.5% 1205/2,205	56.4% 903/1,601	53.8% 935/1,738
FTIC all	66.1% 1,883/2,849	66.8% 1,719/2,573	67.8% 2,221/3,274

Note: Adapted from “SAC At-A-Glance,” by San Antonio College Institutional Research, 2020. (San Antonio College has granted permission to utilize data charts from the college website.)

The National Student Clearing House published a “Persistence and Retention” report in 2021 that demonstrated specific enrollment trends. In that report, persistence was when college students returned to any higher educational institution the following year, and retention referred to college students who enrolled in the same institution as the previous academic semester. The report showed a 73.9% persistence among first time in college students in both two-year and four-year institutions (National Student Clearinghouse, 2021b). That meant just over 25% of college students did not return after their freshman year of college in fall 2020. Specific to two-year colleges, the National Student Clearing House (2021b) reported 58.5% overall average persistence between full-time and part-time students in 2019. In the previous year, 2018, persistence was 62.1% (National Student Clearinghouse, 2021b). San Antonio College (2021) reported its first time in college students’ persistence, which in this case would be college

retention, from fall 2019 to fall 2020 at an average of 44.6% between full-time and part-time students, which was lower than the national two-year average of 58.5%.

The National Student Clearing House (2021b) report further detailed persistence in two-year institutions by detailing continued enrollment by race. Asian and White students had the strongest persistence, and Latinx and Black reported the lowest (National Student Clearing House, 2021b). The race data were not specific to first time in college students, rather the data was separated by two-year and four-year higher educational institutions.

First time in college students are a diverse mix of adults in varying age groups, and many come directly from high school to college. Those first time in college students who transitioned directly from high school in fall 2020 were in an unusual situation, because they completed their senior year virtually and then had to begin college in the same modality (Ezarik, 2021). Many students enrolled into colleges and began classes without ever physically being on campus. That meant orientation, advising, and any welcome convocations were web-based. This web-based introduction to the college experience could impact students differently. Those desiring a virtual experience perhaps preferred that method, whereas others who wanted to see people, the campus, and have an in-person interaction might have felt dissatisfaction. That mindset likely continued when the courses began. Some students were happy and excited to be remote and others were not. Those feelings possibly impacted the findings of this study.

In a study conducted at a university in the northeastern United States, Thibodeaux et al. (2016) asserted that first time in college students struggled with time management and goal setting. The study participants included 589 first semester university freshmen who underestimated the amount of time needed to complete class assignments or to study for an exam (Thibodeaux et al., 2016). Ocampo, a college freshman, shared that time management was a

challenge for her during the first semester of college (California Student Journalism Corps, 2020). In Turner's (2016) study about higher education male retention, the research found that males were often unprepared for the amount of work their college courses required. Ezarik (2021) stated that students in two-year colleges had more support in their learning, but many were still unprepared to enter higher education.

Sæle et al. (2016) suggested that faculty should take time to help students understand how to learn and develop effective study habits. In high school, students felt they could get by with reviewing PowerPoints and attending class, but they quickly realized that college was much more intensive and more work was required to be successful (Turner, 2016). Although those students were adults, many were still maturing and needed guidance in how to be successful in college-level coursework (Sæle et al., 2016). Goal setting is a teachable skill often covered in orientation courses required by first time in college students. Students creating a plan for their success is necessary as they enter in the world of higher education (Thibodeaux et al., 2016).

Another study conducted on 428 first time in college university students to assess learning approaches and academic achievement found that students performed better when they were actively engaged in the learning process and encouraged to develop more in-depth understanding of the course content (Sæle et al., 2016). Taking the time to involve the students in their learning will lead to deeper learning, and in turn, stronger academic performance (Sæle et al., 2016). Also, Sæle et al. (2016) stated that students needed to be taught how to study and proper time management skills to have strong academic performance.

This information paints the picture of underprepared study habits and low academic performance of first time in college students. And, if students have lower student success in the

remote modality semester in this study, this information will help explain that outcome. Or, if students are more successful in the remote modality, this study will provide a different opinion.

## **Gender**

Although there is research about academic performance based on gender in asynchronous online learning, little research exists on student success by gender in the synchronous remote modality. Gender is an important variable because research has found differences in academic performance, including academic performance in online learning, based on gender. The goal of including this variable is to provide insight into student success based on gender within the specific remote learning modality.

From the beginnings of online learning, research has shown that males and females differ in their engagement levels and learning experiences (Rovai & Baker, 2005). Morante et al. (2017) study also found males and females engaged differently in online courses but confirmed both genders were motivated by grades and feedback. Males and females differed in preference of learning modality. Yu (2021) reported that the majority of females favored face-to-face learning, but male students preferred online learning. The reasoning for the difference was the females enjoyed the consistency of face-to-face learning, but the males liked the convenience of online learning (Yu, 2021). In contrast, an older study from Perkowski (2013) found that females had higher levels of academic performance in an online modality in comparison to male students.

An article by Liu et al. (2021) found a difference in academic student performance by gender at China high schools during the COVID-19 lockdown. The study identified that females had stronger abilities to be self-regulated learners (Liu et al., 2021). A self-regulated learner is similar to SDL, and the terms are often used interchangeably in academic research (Saks & Leijen, 2014). Liu et al. (2021) found female students were stronger in the initial phase of

learning referred to as the preparatory phase. The preparatory phase is the process leading up to the actual learning. Female students were better at setting the stage to create an environment to be successful, and females were also stronger with the ability to adjust their moods (Liu et al., 2021). That study also found female students were better at time management and at seeking help from their teachers during remote learning (Liu et al., 2021).

In a Best Colleges 2020 article titled “Trends in Online Education: Gender Differences,” the author provided insight on perceptions of 505 students who graduated from online degree programs in the years 2015–2020 (Venable, 2020). The study was conducted prior to COVID-19 but still provided relevant insight on the gender-specific perceptions of online learning. The female participants in that study reported lower annual salaries than the males, were more diverse than the male respondents, and were younger. In other words, the males in that group of respondents were more likely to be older, white, and had a higher salary. Both males and females reported challenges in online learning, with females experiencing obstacles more than males. Specifically, financial and Internet connections were listed as major challenges in earning their degree (Venable, 2020). Males and females also agreed on the necessary skills in online learning such as time management, persistence, self-direction, self-initiative, and confidence (Venable, 2020). Males and females differed on their additional support needs, with males stating they needed more time management and computer literacy skills (Venable, 2020). Female desires for support were fewer, but women still stated they needed more institutional support with time management (Venable, 2020). The report concluded with findings from open-ended questions regarding guidance for future online students. The primary suggestions were using time management and persistence to be successful (Venable, 2020). Venable (2020) also reinforced that online learning was providing lower income, younger, and minority group females with



educational opportunities. Those findings help researchers understand the climate of online learning before COVID-19.

In a study done post-pandemic on remote transition, Korlat et al. (2021) challenged prior research that indicated males had more competence in digital learning modalities than females. It was found that gender did not impact students' perceived abilities in their success in virtual learning (Korlat et al., 2021). In other words, that study found gender did not impact self-efficacy in virtual learning. Korlat et al. also found that females were more likely to engage with faculty and to ask questions, which in turn, created a stronger teacher response to females. However, that study and others lacked definitive data that indicated academic performance in remote learning specific to gender. Therefore, it is unclear if males or females had stronger academic performance in remote learning courses.

### ***Online Course Academic Performance and Gender***

There are inconsistent findings in online student success by gender (Yukselturk & Bulut, 2007). Therefore, I will provide summaries of studies found in collecting data on this topic. Kupczynski et al. (2014) performed a study on student success of education majors at an educational institution in south Texas. The study found that males and females who were in a low GPA range performed differently in online courses. Specifically, males were significantly less successful in online courses in comparison to females in the same low GPA category (Kupczynski et al., 2014). The authors determined that females were more likely to seek assistance in online courses from their peers, which the authors thought contributed to the females' higher levels of success over their male counterparts (Kupczynski et al., 2014). Both males and females in the middle and upper range GPAs had similar success levels in online courses (Kupczynski et al., 2014). In summary, that study found differences between gender if

the variable of GPA was used. However, there were only differences found in academic performance by gender in the lower level GPA range.

Different results were found in another study done at a community college in south Texas. This study compared student performance in face-to-face and online college algebra courses using the variable of gender (Amro et al., 2015). The authors found students earned higher grades in the face-to-face courses and female grades were higher than males (Amro et al., 2015). In that case, females academically outperformed males in both face-to-face and online courses (Amro et al., 2015).

Paul and Jefferson (2019) conducted a study at Fort Valley State University in Georgia over a period of 8 years to identify if students were more successful in face-to-face or online courses. A total of 548 students were used to compare student performance in environmental science face-to-face and online courses with a focus on the variable of gender. No significant difference was found in student performance by modality or gender (Paul & Jefferson, 2019). That study supported the findings by Kupczynski et al. (2014) that gender did not impact student performance. Also, those findings reaffirmed initial statements by Yukselturk and Bulut (2007) that there was little consistency among research of academic performance in online courses using the variable of gender.

The previously mentioned studies and research are important in understanding trends of student performance in online and face-to-face modalities. However, the studies do not compare the face-to-face learning to the remote modality. There is a gap in research on student success in remote learning, which further highlights the importance of this study.

### **Chapter 3: Methodology**

Unlike face-to-face and online learning modalities, remote learning is a modality that lacks literature about students' academic performance, specifically, productive grade rate and retention. Without data on student academic performance, long-term planning that includes the remote modality can become problematic. This study provided student success data from the remote semester of fall 2020 and compared it to the face-to-face semester of fall 2019. Additional studies will be needed to determine patterns and to identify trends, but this is a crucial first step in analyzing student performance in this new learning modality.

For this study, it was necessary to take a quantitative approach because productive grade rate and retention, which are measured numerically, are key in analyzing student success. As previously mentioned, productive grade rate is the percentage of students per course who earned an A, B, or C as a final letter grade. Retention is the percentage of students who completed the course. To further explain, if students were retained in a course, it means that they did not request to drop or were not dropped by a faculty member. As discussed earlier, many reasons explain why students withdraw from courses. Regardless, both productive grade rate and retention percentages provide important student success data.

#### **Research Questions**

##### ***Primary Research Question***

Were the productive grade rate and retention percentages in the 16-week fall 2020 remote learning first time in college courses (History 1301, Speech 1311, and English 1301) greater than productive grade rate and retention percentages in the 16-week fall 2019 face-to-face first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College?

### ***Secondary Research Question***

Were gender, first generation status, economic status, veteran status, and modality type predictors of productive grade rate or retention in the fall 2019 and fall 2020 semesters first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College?

### ***Null Hypothesis***

Gender, first generation status, economic status, veteran status, and modality were not predictors of productive grade rate or retention in the fall 2019 and fall 2020 semesters first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College.

### **Population Sample**

The participant sample came solely from San Antonio College. Based on enrollment analytics that included the attribute of first time in college, the study identified three different courses highly populated with first time in college students. The data was obtained from the ENGL 1301, HIST 1301, and SPCH 1311 courses. The two academic semesters that served as comparison groups were the fall 2019 semester with the aforementioned face-to-face courses and the fall 2020 semester remote sections in the same three courses. Although all students enrolled in those sections were included in the data collection, Table 3 shows the total number of first time in college students by semester and gender, which were representative the study population.

Student population demographics for those courses was used to answer the secondary research question. No identifying information such as name or student identification number was used in this study. Table 4 provides enrollment for the two semesters, enrollment by subject, and enrollment by gender. In the table, there is a difference of total enrollment between the two semesters and differing numbers of enrollment by gender. As mentioned earlier, there was a

national decrease in fall 2020 enrollment at 2-year colleges by 10.1% (National Student Clearinghouse Research Center, 2021), but San Antonio College decreased only by 1.37% (San Antonio College, 2021). More specifically, National Student Clearinghouse Research Center (2021) reported a decrease of 14.7% for males and a decrease of 6.8% for females in 2-year colleges. San Antonio College reported well under the national statistics with a decrease of only 6.46% for males and having a 1.83% increase for female enrollment.

**Table 3**

*San Antonio College First Time in College Enrollment by Gender for Fall 2019 and Fall 2020*

FTIC Enrollment by Semester	Fall 2019	Fall 2020
Males	622	415
Females	911	720
Total percentage each term	1533 = 50% of students	1135 = 44% of students

Note: From “SAC At-A-Glance,” by San Antonio College Institutional Research, 2020. (San Antonio College has granted permission to utilize data charts from the college website.)

**Table 4**

*San Antonio College Enrollment by Gender and Selected Courses for Fall 2019 and Fall 2020*

Enrollment by Gender	Fall 2019 ENGL 1301	Fall 2020 ENGL 1301	Fall 2019 HIST 1301	Fall 2020 HIST 1301	Fall 2019 SPCH 1311	Fall 2020 SPCH 1311
Males	725	545	422	278	146	121
Females	1,100	995	474	447	217	219
Total	1,825	1,540	896	725	363	340

Note: From San Antonio College Institutional Research, 2020. (San Antonio College has granted permission to utilize enrollment data.)

Quantitative research analysis requires at least two groups to compare the statistical data (Creswell and Guetterman, 2019). The two groups that were drawn from the two different fall

semesters were composed of the same first time in college population characteristics. Student academic performance is often measured using different students, because they typically do not take the same courses twice. Therefore, the analysis is in seeking a pattern or determining a relationship between variables. For this study, only participants enrolled in the three different selected 16-week courses from fall 2019 and fall 2020 were used.

Quasi-experimental design offers the researcher an opportunity to gather data from intact groups rather than random selection (Creswell & Guetterman, 2019). A quasi-experimental design was utilized because the participants were not randomly selected, rather selected groups from San Antonio College that met the desired characteristics were chosen. Leavy (2017) also explained that quasi-experimental design was the “utilizations of natural settings or groups, and thus subjects are not randomly assigned” (p. 260). San Antonio College offers a variety of courses students take throughout their undergraduate or associates degree or certificate. The three courses selected provided a natural setting of an established group of first time in college students, which met the criteria needed to answer the research questions.

### **Data Collection**

San Antonio College, located in San Antonio, Texas, served as the research site. The location was the most obvious choice for data collection because that was where I was employed and I was familiar with the student population. San Antonio College has an Office of Institutional Effectiveness, which is solely responsible for collecting and providing data on its students. Much of the information was available to the public on the college website, and other data was provided to faculty and staff. As a faculty member, I had access to large Excel documents that provided specific semester student performance data and included a variety of demographic variables. Those previously attributed data collections were given to academic

departments throughout the academic year to aid in course scheduling and to help identify key characteristics of our students with the goal of increasing student success. Those datasets also provided specific information regarding productive grade rates and retention in courses that was necessary for faculty to determine student success of their individual courses. San Antonio College gave me written permission to utilize the secondary data to complete my research. I had access to the Excel documents on the college document site and had all files encrypted and saved on my password-protected personal computer.

### **Data Analyses**

The SPSS data analysis tool was used to answer the primary and secondary research questions. The primary research question used descriptive statistics because it helped summarize data (Cronk, 2008). Descriptive statistics, specifically central tendency, was used to identify and to compare the means of productive grade rate and retention for each of the three courses for the two different semesters. The fall 2019 semester data included face-to-face course results, and the fall 2020 semester showed remote learning course results. The independent variables were the instructional modalities, and the dependent variables were productive grade rate and retention data for the different semesters. In order to test the significance of the compared productive grade rate and retention means found using descriptive statistics, an independent samples *t*-test was performed. A *t*-test is utilized when there is comparison of means from two different groups (Pallant, 2016).

Hypothesis: San Antonio College first time in college student productive grade rate and retention will be greater in the remote fall 2020 semester remote learning modality than in the face-to-face fall 2019 semester. (The hypothesis was based on the pilot study findings.)

SPSS allowed creation of bar graphs based on the findings. Bar graphs, with the statistical data labeled, are commonly shown to visually explain data in large academic convocations. These convocations typically take place at the beginning of academic semesters and provide recent information about the college and student academic performance. This data, though simplistic, is valuable to faculty and easy to decipher and recognize patterns. Student success data presented in this pattern could have immediate and long-term impacts to course scheduling and modality planning. Study findings were showcased from the three courses combined as they were representative of the total first time in college population and separately to determine if there was consistency among the student performance data.

The secondary research question was answered by running a binary logistical regression. Hua et al. (2021) explained that binary logistical regression predicted the influence of various independent variables existing simultaneously to predict the impact on the dependent variable. To further explain, a binary logistical regression was used when a researcher wanted to determine which variables were significant predictors of an outcome. In this study, the dependent variables were productive grade rate and retention. The independent variables that were used were gender, first generation status, economic status, veteran status, and modality. The binary logistical regression helped determine if any of the independent variables were significant predictors of productive grade rate or retention.

To create a SPSS dataset that could run a successful binary logistical regression, the productive grade rate and retention data were extracted from both semesters in the three selected courses and the independent variables from the college Excel data. All of the independent variables tested were dichotomist. A dichotomist variable is a variable that has one of two descriptions (Horber, 2022). Then, the independent variables were recoded using a 1 or a 2.



Table 5 presents the labels. Finally, the regression test was run to determine predictors of productive grade rate and retention.

**Table 5**

*Recoding Independent Variables for SPSS Dataset*

Label	1	2
Gender	Female	Male
First Generation	First Generation Student	Non-First-Generation Student
Economic Status	Economically Disadvantaged	Non-Economically Disadvantaged
Veteran Status	Non-Veteran	Veteran
Modality	Fall 2019 (Face-to-Face)	Fall 2020 (Remote)

It is important to mention the binary logistical regression test identifies statistical significance, whereas descriptive statistics demonstrates practical difference. This more sophisticated test is important because of the difference in population sizes. Face-to-face enrollment was larger in fall 2019 than the remote enrollment of fall 2020 when comparing the selected courses. Therefore, using binary logistical regression allowed me to identify the statistical significance and to test additional variables to determine if they were predictors of an outcome (see the results provided in Chapter 4).

## Chapter 4: Findings

A quantitative study was used to compare productive grade rate and retention data from the fall 2019 face-to-face semester and the fall 2020 remote learning semester to determine in which semester the students had higher measured student success. As mentioned, student success in this dissertation is the combination of productive grade rate and retention. Productive grade rate is the percentage of students per course who earned an A, B, or C and retention is the percentage of students who remained in the course after the drop date. The student success data use in this study was collected from three different subject areas. Freshman-level English (ENGL 1301), freshman-level History (HIST 1301), and freshman-level Speech (SPCH 1311) courses were selected because those courses had close to half of their total enrollment from first time in college students. Those courses were also selected because the enrollment was over 1,000 students in each of the semesters, and the three courses are considered to be core classes according to The Texas Higher Education Coordinating Board (2021) and the San Antonio College. Those courses are not specific to a particular certification program or undergraduate major, rather they are common courses taken by all students hoping to satisfy the core curriculum requirements. Therefore, the student population in this sample was a diverse mix of students and undergraduate degree plans.

As mentioned in Chapter 3, a decrease of 398 students in first time in college enrollment occurred from fall 2019 to fall 2020. That decrease in enrollment was consistent to the National Student Clearinghouse (2021) fall enrollment report national decrease in enrollment of 2-year colleges by 10.1%. San Antonio College saw a much smaller decrease of enrollment with only a 1.5% decrease (San Antonio College, 2021). Although there was a smaller decrease of

enrollment at San Antonio College, fewer students were enrolled in remote sections in fall 2020 than face-to-face sections in fall of 2019.

**Table 6**

*San Antonio College Enrollment of Face-to-Face and Asynchronous Online Fall 2019 to Fall 2020*

	Fall 2019	Fall 2020
Total San Antonio College enrollment	19,499	19,231
Total seats enrolled in face-to-face courses	32,056	25,114
Total seats enrolled in 100% asynchronous online courses	18,232	20,931

*Note:* Adapted from Institutional Research Report, San Antonio College, (2021). (San Antonio College has granted permission to utilize data charts from the college website.)

Table 6 shows a shift in enrollment. There was a large decrease in fall 2020 in face-to-face courses. Please note, this table does not specify that the fall 2020 face-to-faces course were actually conducted remotely. The chart demonstrates total student enrollment only differed by 268 students, but the total seats in face-to-face courses decreased in 2020 and the online total seat enrollment increased. This data suggests that students enrolled in 100% online courses more in fall of 2020 than in 2019, and a variety of reasons could support that shift. First, students were informed that face-to-face courses were not going to be held on campus for the fall 2020 semester and their instruction would come from Zoom rather than on campus inside physical classrooms. Many students had already experienced instruction from Zoom during the switch midsemester in spring 2020 at San Antonio College, from their high schools or from taking summer 2020 classes. The experience on Zoom might have given students stronger self-efficacy to navigate completely online courses. Also, students might have already determined they disliked the Zoom modality and were willing to shift to 100% online courses. In either case, online courses became more popular in fall 2020, which helped explain the decrease in

enrollment in the selected courses in this study in the comparison semester.

### **Primary Research Question**

Were the productive grade rate and retention percentages in the 16-week fall 2020 remote learning first time in college courses (History 1301, Speech 1311, and English 1301) greater than productive grade rate and retention percentages in the 16-week fall 2019 face-to-face first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College?

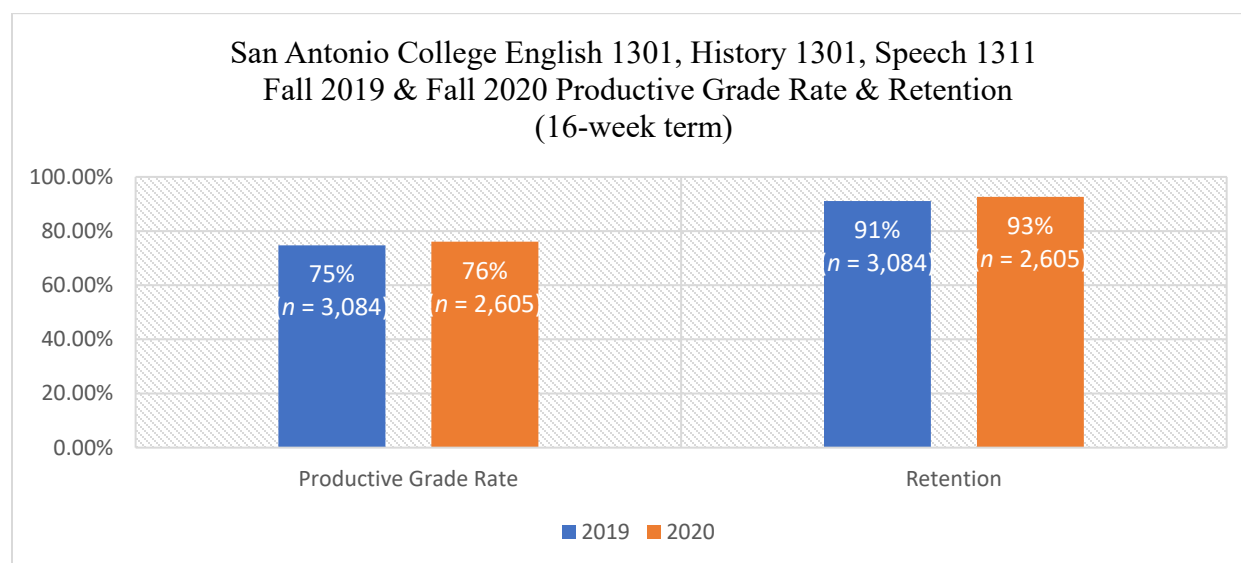
To respond to the primary research question, all fall 2019 face-to-face sections and all fall 2020 remote sections of the above-mentioned courses needed to be extracted from the existing semester datasets provided by the college. A new dataset was created with the specific course data referenced in the question. Once the new dataset was created, a descriptive statistics test was run to find the mean productive grade rate and retention for the fall 2019 semester and the fall 2020 semester. It is important to mention that results of this study are presented in bar charts (figures) and tables because those visual data representations are often used in academic convocations to demonstrate student performance data. Seeing results in this manner is a visually effective way for faculty and staff to identify differences and growth among semesters and student groups. These tools, which helped answer the primary research question, are straightforward and are designed to provide clear representation of practical research data. See the Table 9 bar graph for the findings.

Figure 2 is a bar graph output of the productive grade rate and retention from fall 2019 face-to-face courses and fall 2020 remote courses. The data came from a combination of all ENGL 1301, HIST 1301, and SPCH 1311 face-to-face courses in the fall 2019 and the remote courses from fall 2020. Productive grade rate and retention were higher in fall 2020, which indicated student success was higher in remote courses rather than in face-to-face courses when

comparing those two semesters. Those results demonstrated practical differences were not tested for statistical difference.

**Figure 2**

*Productive grade rate and retention by combined selected first time in college courses*

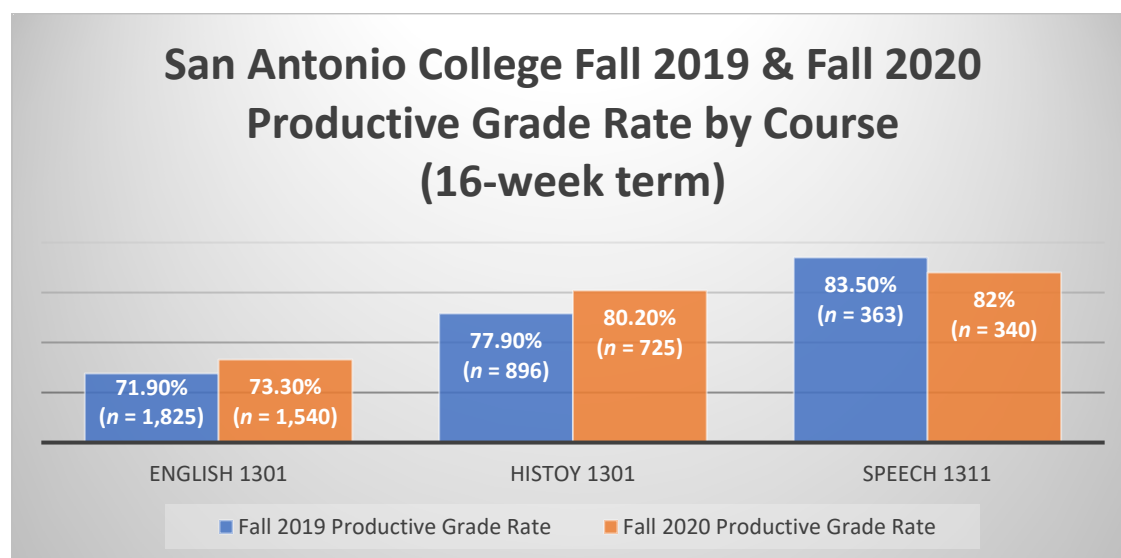


To test the statistical significance, an independent samples *t*-test was conducted to compare productive grade rate for students in face-to-face modality and remote modality conditions. No significant difference was found in the productive grade rate for face-to-face modality ( $M = .75$ ,  $SD = .43$ ) and remote modality ( $M = .76$ ,  $SD = .42$ ) conditions;  $t(5687) = -1.3$ ,  $p = .98$ . Those results suggested that modality did not have an effect on productive grade rate. Also, in order to test the significance, an independent samples *t*-test was conducted to compare retention for students in face-to-face modality and remote modality conditions. A significant difference was found in the retention for face-to-face modality ( $M = .91$ ,  $SD = .28$ ) and remote modality ( $M = .93$ ,  $SD = .25$ ) conditions;  $t(5687) = -2.8$ ,  $p = .03$ . Those results suggested that modality did have an effect on retention.

The results of the independent samples *t*-test suggested that although the data in the bar graph demonstrated that academic performance means were higher in the remote semester of 2020, the difference between the semesters was not statistically significant for productive grade rate but was significant for retention. This additional test of significance is valuable because it confirms the findings are factual and not due to error. To further analyze the data from the Figure 2, Figures 3 and 4 detail the productive grade rate and retention data by the semester and for specific courses.

**Figure 3**

*Fall 2019 and Fall 2020 Productive Grade Rate Data per Selected First Time in College Courses*



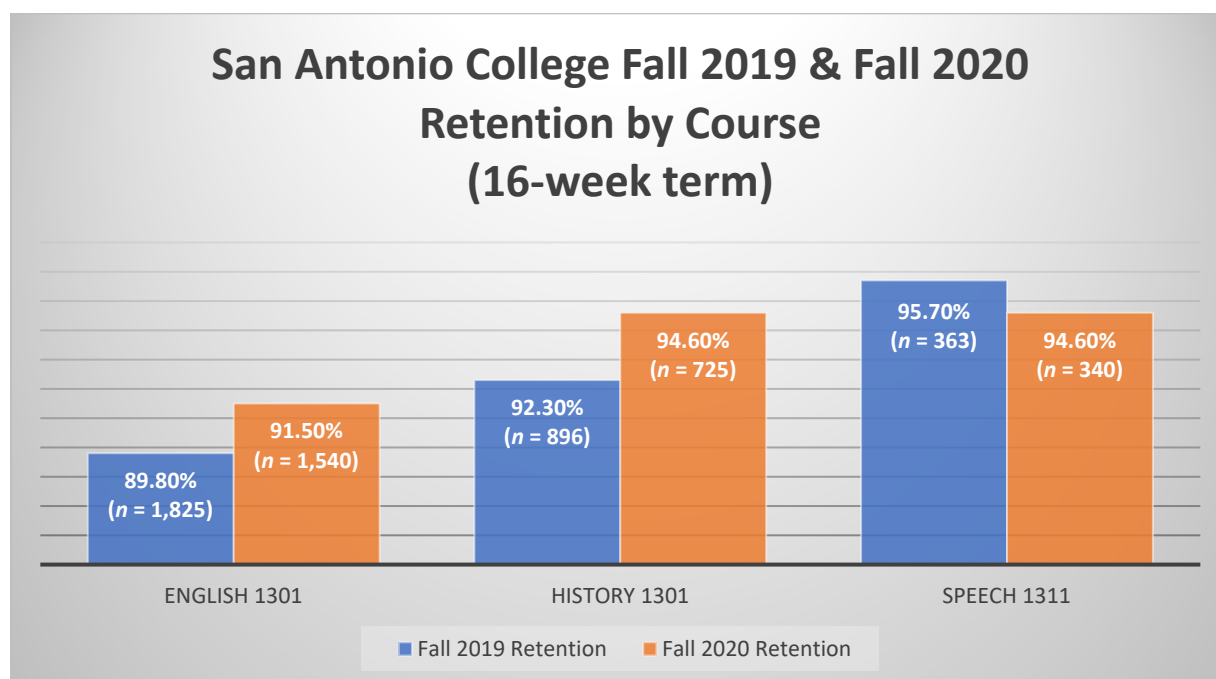
Figures 2 and 3 show an increase of productive grade rate and retention from fall 2019 to fall 2020 in ENGL1301 and HIST 1301. Therefore, in that specific comparison, students performed better in those two subjects in fall 2020 remotely than face-to-face in fall 2019. In contrast, the SPCH 1311 productive grade rate and retention data was greater in the fall 2019 face-to-face sections. There was also a smaller difference in enrollment, only 26 students, in the

SPCH courses between the two semesters.

As a faculty member who teaches Speech 1311, I can help explain the data in Speech 1311. I believe students' performance was lower in the remote modality because of the learning objectives of this course compared to English and History. Speech required students to communicate effectively in small groups and to deliver presentations in order to meet the learning objectives. Those objectives were performed and measured within Zoom, which might have been unfamiliar to students. In other words, students were required to communicate virtually in group settings. Likely, that was a still new practice for many. Based on the growth and development of virtual skills I witnessed instructing remote courses, I think as students become more comfortable with remote learning, there could be an improvement on productive grade rate and retention in the Speech 1311 remote environment. Further studies would need to be conducted to test that hypothesis.

**Figure 4**

*Fall 2019 and Fall 2020 Retention Data per Selected First Time in College Courses*



Regardless of the specific findings in Speech, the primary research question answer was based on the average of the three purposely selected courses. The research question used productive grade rate and retention averages because that was the traditional practice of San Antonio College to present information. In this study, the findings demonstrated that no significant difference was found in productive grade rate for first time in college students in remote classes in fall 2020 compared to the fall 2019 face-to-face semester. However, there was a significant difference in retention. More semesters and additional courses would need to be analyzed in a future study to make assumptions about first time in college students in the remote learning modality.

### **Secondary Research Question**

The secondary research question in this study analyzes the significance of the primary research question findings and adds in several variables to determine what is predictive of student success. The variables in this question are gender, first generation status, economic status, veteran status, and modality. Each variable was dichotomous, meaning it could be categorized in one of two parts. To be specific, the variable of veteran status was classified as a 1 or a 2. That meant a student was classified as either a veteran or not. Please reference the variable chart figure 1 in Chapter 3 to see labels for all the independent variables. The variables were selected because they were available in the student success data sets provided to faculty at San Antonio College. Also, the variables were referenced in higher education literature as factors of student success. San Antonio College and other higher education institutions use these variables to guide decisions and student success planning.

The variable that directly related to the primary research question was modalities. In the secondary research question, the modality variable was either face-to-face or remote. As a



reminder, fall 2019 was face-to-face and fall 2020 was remote. The additional variables were not all discussed in this study but were still relevant because they existed in the selected courses and in literature regarding higher education student performance. The results of the secondary question provided information about the significance of the primary findings and added predictors of student success. More semesters will need to be analyzed to make a more concrete assumption regarding findings of this measure of student success.

### ***Secondary Research Question***

Were gender, first generation status, economic status, veteran status, and modality type predictors of productive grade rate or retention in the fall 2019 and fall 2020 semesters first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College?

Null Hypothesis: Gender, first generation status, economic status, veteran status, and modality were not predictors of productive grade rate or retention in the fall 2019 and fall 2020 semesters first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College.

In order to respond to the secondary research question, all fall 2019 face-to-face sections and all fall 2020 remote sections of the above-mentioned courses needed to be extracted from the existing semester datasets provided by the college along with the additional variables. To determine which variables were significant predictors of productive grade rate and retention, a binary logistical regression was performed in SPSS. As explained in Chapter 3, a binary logistical regression is used to analyze multiple variables and their impact on an outcome (Patel, 2021). The results in the primary research question identified a practical difference in modality using descriptive statistics.

### ***Secondary Research Question Results***

A binary logistical regression was performed to determine if gender, first generation status, economic status, veteran status, and modality type impacted the likelihood that students earned a positive productive grade rate (A, B, or C in a course). The regression explained .4% (Nagelkerke R<sup>2</sup>) of the variance in productive grade rate and correctly classified 75.5% of cases. Examination of the variables in the equation table Table 8 found gender to be statistically significant. Females were .811 times more likely to earn an A, B, or C (positive productive grade rate) than their male counterparts. Therefore, gender was a significant predictor of productive grade rate, rejecting the null hypothesis. First generation status, economic status, veteran status, and modality type were not significantly associated with predicting productive grade rate, therefore, accepting the null hypothesis.

### ***Secondary Research Question: Retention***

A binary logistical regression was performed to determine if gender, first generation status, economic status, veteran status, and modality type impacted the likelihood that students earned a positive retention rate (retained in a course after drop date). The regression explained .7% (Nagelkerke R<sup>2</sup>) of the variance in retention and correctly classified 92.1% of cases.

Examination of the variables in the equation found gender and modality to be statistically significant. Females were .812 more times likely to be retained compared to their male counterparts, and students were 1.257 times more likely to be retained in fall 2019 (face-to-face modality). Therefore, gender and modality were significant predictors of retention, rejecting the null hypothesis. First generation status, economic status, and veteran status were not significantly associated with predicting retention and accept the null hypothesis

## Summary of Findings

Based on the primary research question and the method of analysis used, descriptive statistics found productive grade rate and retention were higher in the analyzed first time in college courses remote semester than the face-to-face semester. The independent sample t-test compared the statistical difference between these means and determined there was not a significant difference between productive grade rate but there was a significant difference between retention. In addition, the binary logistical regression test discovered that modality was not a significant predictor of productive grade rate but was a significant predictor of retention. Therefore, the findings suggested that students were more likely to be retained in a face-to-face course rather than a remote course.

The binary logistical regression also tested additional variables in order to predict their impact on student success. The variables that were not significant predictors of productive grade rate or retention were first generation status, economic status, and veteran status. Gender was a significant predictor on both productive grade rate and retention, indicating that females were more likely to earn an A, B, or C in the selected courses and be retained.

When only using descriptive statistics, the results of the secondary research question were different than the results of the primary research question. This can be confusing, but it is important to understand that the initial results were simply a comparison of averages whereas the t-test and secondary research question took the analysis a step further to determine if the results were statistically significant. The population sample sizes were different, so using averages alone does not reveal the total picture. The logistical regression was a necessary step to determine if the course modality truly predicted student success. In this case, modality did not impact productive grade rate but did impact retention. The variable that impacted both productive grade

rate and retention was gender. In the next chapter, these results and the connections with the literature will be discussed further.

## Chapter 5: Discussion

The purpose of this study was to compare student success data, productive grade rate, and retention between a semester where the courses were offered in the face-to-face modality to a semester where the same courses were offered in a remote, or online, synchronous modality. Also, additional variables were analyzed to determine if they were predictors of student success. The three courses used in both semesters were freshman-level History, English, and Speech. Those courses were selected because of their large enrollment of first time in college students. As mentioned in chapter 2, first time in college students are at risk for dropping out. Because of this, it is important to identify any possible strategies that would increase their persistence to future academic semesters.

The semesters used in this study were fall 2019 when classes were offered on campus in the traditional face-to-face modality and then fall 2020 when classes were offered only remotely due to the ongoing COVID 19 pandemic. Fall 2019 was chosen because it was the last semester at San Antonio College that was uninterrupted by COVID-19. Fall 2020 was selected because it was the first semester where classes were offered using the remote modality.

### ***Primary Research Question***

Were the productive grade rate and retention percentages in 16-week fall 2020 remote learning first time in college courses (History 1301, Speech 1311, and English 1301) greater than productive grade rate and retention percentages in 16-week fall 2019 face-to-face first time in college courses (History 1301, Speech 1311, and English 1301) at San Antonio College?

The primary research question results initially showed that student productive grade rate and retention were greater in the remote semester than in the face-to-face semester. However, a *t*-test was also performed and found no statistical significance in the difference between the productive grade rate means but did find the retention mean differences to be statistically

significant. The secondary research question confirmed the statistical findings from the  $t$ -test. Therefore, the discussion and recommendations in this chapter are going to be based on the findings and analyses of the secondary research question.

### ***Secondary Research Question***

Were gender, first generation status, economic status, veteran status, and modality type predictors of productive grade rate or retention in fall 2019 and fall 2020 semester first time in college courses (History1301, Speech 1311, and English 1301) at San Antonio College?

### **Modality and Productive Grade Rate**

The results of the secondary research question found that modality was not a significant predictor of productive grade rate. That suggested students were just as likely to earn an A, B, or C in the remote semester as they were in the face-to-face semester.

Regarding productive grade rate and SDL, the similar student productive grade rate performance in both modalities suggested that both groups of students possessed comparable levels of SDL. That meant students had some strategies to navigate their learning and to determine their own needs. I believe that was because many students and faculty at San Antonio College had already been exposed to the college's learning management system, Canvas, before the rushed (emergency) transition to remote learning. Although there was not a set standard of the extent Canvas was incorporated, using Canvas had been a requirement for faculty at San Antonio College for approximately 6 years. Faculty used Canvas to provide a variety of learning support for students like posting announcements, making notes accessible, and keeping a virtual gradebook. I know some faculty did that more than others, so students all had different levels of skill and comfort using Canvas.

Regardless, the utilization of Canvas is going to encourage and prompt students to use their SDL skills, because when there is a location where course information is stored, students can independently seek answers to questions. This opinion is consistent with Geng et al. (2019) who found that using technology in courses is going to increase motivation and SDL. Also mentioned earlier, the public health response to the pandemic put students' SDL skills to the test (Alghamdi, 2021; Mahlaba, 2020). Specifically, students who had little practice demonstrating how they could take the lead in their learning were finally given the opportunity due to the pandemic and shift to remote learning. I think the reason that San Antonio College productive grade rates were similar in both the face-to-face and remote learning modalities is because of the SDL skills that had already been fostered and utilized by incorporating Canvas in our courses. Remote learning was new, but many of the classroom tools were familiar due to Canvas.

### **Modality and Retention**

The results of the secondary research question suggested that modality was a significant predictor of retention. Specifically, the face-to-face modality of fall 2019 had a more successful retention rate than the remote fall 2020 semester.

Regarding retention and self-efficacy, the secondary research question found that retention was higher in the face-to-face semester. That finding indicated self-efficacy, which is the belief that one has the abilities to be successful in a situation (Tinto, 2019), was stronger in face-to-face courses and weaker in the remote modality. I speculate the feelings of low self-efficacy might have been due to the unfamiliarity with courses being taught entirely in the remote modality in combination with the additional stresses related to the pandemic. We need to keep in mind the potential issues those students were facing due to the pandemic and how the issues contributed to the students' learning experience. Those could include issues around food

insecurity, job loss, mental health, and even sickness. A new learning modality would be challenging even in an ideal circumstance, but the added pandemic-related challenges add another layer of distress. This speculation is consistent with an earlier study that found stress levels were connected with self-efficacy of remote learning (Alemany-Arrebola et al., 2020). Unfortunately, that possibly led to more students withdrawing from the fall 2020 courses in this study. I imagine once the pandemic subsides and students are less stressed about issues related to COVID-19, their feelings of self-efficacy might strengthen toward remote learning.

### **Gender and Productive Grade Rate and Retention**

The analyses also identified gender as a predictor of student success with females more likely to earn an A, B, or C and to be retained in the course. That finding was consistent with Amro et al. (2015) whose study also found females performed better than males in the online modality. However, Kupczynski et al. (2014), Paul and Jefferson (2019), and Yukselturk and Bulut (2007) found no statistical difference in academic performance using the variable of gender. These studies are valuable to mention in connection with the findings of this study because they are predictors as to how students will perform in courses that are not face-to-face. Also note that the results of those studies are representative of online courses rather than a remote modality.

It is important to remember that not only is being identified as female predictive of student success in this study, but female enrollment is also growing at San Antonio College. As mentioned earlier, a larger enrollment decrease occurred for males than females from fall 2019 to fall 2020. In consistency with the National Student Clearinghouse Enrollment Report (2021a), San Antonio College also reported a decrease of male enrollment, but female enrollment actually increased. San Antonio College has reported a larger enrollment of females over males for the



past four years, but the fall 2020 difference was the largest, with female students making up 63.3% of the enrollment and males making up only 36.7% (San Antonio College, 2020). This data is consistent with National Student Clearinghouse Enrollment (2021a) that reports a higher decrease over the past four years in male enrollment than female enrollment. Therefore, further research needs to be conducted to determine why females are outperforming and outnumbering their male counterparts at San Antonio College and if this gender data is a consistent among other higher educational institutions.

Regarding gender in relation to self-efficacy, sense-of-belonging, and SDL, the research reviewed in Chapter 2 identified behaviors of female students that supported the academic success findings of this study. Liu et al. (2021) reported that high school female students in remote learning had higher levels of SDL, were better at preparing for remote learning, and had stronger time management skills than male students. Liu et al. also reported that females were more likely to seek support from their instructors than were male students. That behavior was also described by Korlat et al. (2021) and Kupczynski et al. (2014), who stated that university female students were more frequently seeking assistance from faculty in the online learning modality than their male classmates. This helps explain why gender is a predictor of student success. If female students are more likely to seek support, that would indicate they are more apt to engage in the course, which is going to create a stronger sense of belonging within the classroom than males. As stated by Strayhorn (2018), engaging in the classroom frequently leads to a sense of belonging, which means they feel valued and respected. Students who feel valued contribute more, seek assistance, and then ultimately have better academic achievement.

As an educator, I can confirm this behavior. When students ask me questions, they are more likely to develop a connection with me as an instructor. This is because usually these

questions often lead to conversations about the course content and typically end with me reminding them that I am always here to help and to keep the questions coming. This additional time with students creates a comfort for any further questions they might have. I also agree that I see this more frequently in female than in male students.

The successful behaviors of female students, the growth of female enrollment, and data that show females outperforming male students can be celebrated but also cause concern about male students. I am worried about the future of males in higher education and specifically the future of males at San Antonio College. More support is needed to identify and fill the achievement gaps, more outreach to promote enrollment, and more training for faculty to learn how to engage with male students to create a stronger sense of belonging for them in the classroom. Baldasare (2021) analyzed the current strategies that two-year colleges are implementing to improve persistence in male students such as learning communities, event participation, and mentoring. He found that academic advising was the most important strategy in retaining male students (Baldasare, 2021). Baldasare (2021) also suggested that colleges conduct an assessment of their current services that support male students to identify what was working and how to promote those services. Hopefully, with time and implementation of strategies, males can narrow the achievement gap.

## **Results Summary**

In summary, the results of my research study bring me to two different conclusions. First, the results in both modalities reported similar productive grade rates. Therefore, the remote modality needs further analysis to determine if this is a pattern of student success. If so, remote courses should be offered as an option for students in the same way that face-to-face and online courses are. The pandemic forced education to make the shift to remote learning, and just

because the pandemic subsides, we should not take away the educational practices that emerged and certainly not those that are effective.

Secondly, each semester at the faculty convocation, quantitative data is presented to faculty using averages of productive grade rate and retention of students to show academic performance by semester. Information presented in this manner does not provide statistically significant results or fully consider the various student demographic variables. Using binary logistical regression allowed me to test multiple dichotomist variables to determine if they are predictors of student success. Because my results indicated that productive grade rate was not significant and retention was significant based on modality, I now question the way in which data have been presented in the past. Specifically, I wonder if the college administrators could present a more detailed picture of student academic performance that would be easy to follow. There is certainly value in comparing means and finding patterns, but taking a deeper look allows educators to see a bigger picture and to test if there is true significance in the results.

### **Limitations**

The greatest limitation is also the greatest reason for this study. There is a lack of current data about remote learning and student performance in higher education. To be specific, little published research has focused on first time in college students' productive grade rate and retention in this modality. Also, little has been published regarding the difference in academic performance of forced or voluntary remote instruction. This lack of information prevents higher education administrators and faculty from understanding the needs of students that are unique to remote learning. In turn, little planning or few specific strategies have been put in place to promote academic success. The only way to overcome this limitation is to perform and publish academic research about the remote learning modality.

A second limitation of this research study is the narrowed scope of the population. San Antonio College is the only educational institution considered in this study. The demographics of this community college and the first time in college students there might not be representative to all colleges. My experience with remote learning as an instructor is also only from this campus. I have first-hand knowledge of the emergency transition that occurred in spring 2020 and the practices and trainings required in preparation for fall 2020. However, I do not know, nor is it widely reported, how other institutions responded, so my perception is limited. Regardless of that limitation, this study will certainly provide a preliminary reference and perhaps a starting point should other institutions want to conduct a similar comparison.

Another limitation comes from the use of the binary logistical regression test and the low demonstrated  $R^2$  and estimate of variable variance. However, using the statistical test of binary logistical regression with a large population will often result in a low variance. Strand et al. (2011) claimed that variance should not be a main focus of the output, rather the researcher should focus on significance. Also, the variance output is calculated using categorical variables rather than continuous variables. To confirm the variance was similar with my data, additional analyses disaggregating the data based on course showed similar levels of variance. This issue of variance is something of which those studying academic performance measurements should be aware when conducting analyses but also keep in mind the variables used. For example, some of the variables are categorical, like gender and veteran status, and others are continuous, like age and amount of credit hours earned. The different types of variables used and how they are coded could impact the outcome of variance.

Limitations are also present due to the pandemic regarding students compared in this study. Fall 2020 was the first semester that remote instruction was an offered modality in place

of face-to-face courses because of the ongoing pandemic. Many of the students experienced the transition the previous spring semester and developed their own opinions about the modality. For the fall 2020 semester, students had no choice but to enroll in remote sections unless they preferred to enroll in asynchronous online sections or not attend at all. The limited modality options might have deterred registration. St. Amour (2020) found enrollment for fall 2020 had declined in community colleges, with an even stronger decline of incoming freshman because of the challenges they are facing from the pandemic. Also, many low socio-economic students were unable to enroll due to financial strain from COVID 19 (Rudenstine et al., 2020). Those conditions likely impacted the student enrollment at San Antonio College, therefore the enrollment might not be as representative as it would be in a time when a pandemic is not occurring. Thus, the results are from a pandemic environment, and perhaps a different situation would produce different data.

Other limitations of the study are the lack of information concerning instructional quality or rigor of the courses delivered remotely or face-to-face and the possible leniency (in terms of assignments, grades, and attendance policy) provided to students during that time of uncertainty. Gonzalez et al. (2020) explained that student performance improved during the COVID-19 pandemic, but it is hard to have exact performance comparisons between previous courses and courses that adjusted instruction in unknown and unknowable ways due to COVID-19. Assessment practices and assignments might have been altered due to limitations of modality and the instructor's skill level of the used technology. Empathy, flexibility, and compassion have been needed more as an educator during this past year than ever before. Because of those needs, there is a chance faculty loosened restrictions, deleted typical projects, or reduced course

assignments. Therefore, only a broad assumption can be made based on student success data rather than exact comparisons (Gonzalez et al., 2020).

Finally, faculty have had their own struggles and hurdles this past year, which is certainly a limitation in this study. Stress is at an all-time high, and many faculty have considered leaving the profession (Flaherty, 2020). Mental health and a variety of other hurdles might have prevented courses to be facilitated in an identical manner to the contrasting face-to-face semester.

### **Recommendations and Conclusions**

My first recommendation is to reconsider the ways in which student success is analyzed and measured. Higher educational institutions that receive federal funding are required to report student performance data such as graduation rates, retention, and academic student learning performance to the government (Dimino, 2019). However, based on the literature and my experience in the field, generalizations are often made regarding student populations without looking at the covariables that have potential to impact performance. To be specific, student performance is measured at 2-year and 4-year colleges similarly (Dimino, 2019). However, we know the students at these educational institutions are, in fact, very different. Blankstein and Wolff-Eisenberg (2020) wrote an article detailing a different approach to measuring student success with the profile of a community college student in mind. Their argument was that many of the current measurement practices in place did not take into consideration the unique characteristics of community college students. Consistent to the topics mentioned in chapter 1, Blankstein and Wolff-Eisenberg (2020) discussed the impact of food insecurity, childcare, student engagement, homelessness, and mental health on community college students. With those issues in mind, their approach to measuring student success was called holistic student

success and challenged traditional metrics used that focused solely on academic success. Holistic student success aims to ensure all the students' needs are met and, in turn, students will also be successful academically.

In agreeance with Blankstein and Wolff-Eisenberg's (2020) suggestion to take a holistic approach to measuring student success, I also think it is important for colleges to take a more specialized method to determine the success of their students. In Dimino's (2019) article, "How Outcomes Metrics Can Better Reflect Community College Performance," she states, "having a fuller picture of outcomes data is necessary for promoting transparency, improvement, and accountability across the higher education system." Therefore, if higher educational institutions could create qualitative surveys for their unique student populations to learn more about their specific needs and where the support gaps are, they could identify areas of improvement more easily. An important part of these surveys would be to share the results with faculty and to include the faculty perspective in developing solutions.

In addition, further research is needed to determine and analyze patterns of student success in remote learning modalities. This study only focused on three specific courses that had a large population of first time in college students. It also was conducted using the first semester when remote learning was offered as a modality in place of the traditional face-to-face courses due to COVID-19. In the upcoming semesters, should remote learning continue to be offered, student success data will need to be compared between face-to-face and remote courses, including a wider scope of courses and student demographics, to determine where students have stronger performance. Those findings will demonstrate more representative analyses because the data will come from the same semester rather than two different semesters. That data will also be

pulled from a semester where students were given a choice between modalities rather than forced into remote learning because of campus closure.

The additional analysis of remote learning is very important because of the stage of the pandemic and when this data was collected. The data was from fall 2020 when large-scale shutdowns occurred and many feared the virus. Students were unsure when life would return to normal or when schools would reopen. Those factors and the ones mentioned previously regarding learning during the peak of the pandemic created a different context for students that certainly impacted the data. Additional semesters when the pandemic has calmed will be most helpful in determining the impact modality has on student success.

Each higher education institution should also perform a study where all three modalities are compared to best determine in which learning method student success is the highest. This comparison of asynchronous online, remote, and face-to-face student success data could serve as an excellent data source and, ultimately, be an advising tool to best guide students. I would also recommend that semester type be considered as a variable. For example, fall semesters should be compared to fall and spring to spring. It is common for higher educational institutions to have a variety of semester lengths such as 16-week, 14-week, and 8-week. Those different semester types should also be considered as variables to student success. Perhaps level of course such as freshman or sophomore should also be a consideration. The more specific information is compared, the more complete picture will be created of student success in a remote modality. Analyzing the success of online and face-to-face learning modalities will take years to determine the effectiveness, sustainability, and overall necessity of the remote modality.

Additional research studies need to further investigate the different variables of students to determine which are predictors of success in a particular modality. For example, some



identifying variables that should be taken into consideration are age, miles residing from campus, work status, parent status, and academic major. These variables would be useful for colleges because of the varying demographics of each of their unique student populations. For example, a student who is a full-time working parent of multiple children and living more than 20 miles from campus will likely have different academic performance than a student living close to campus without children or employment. Having the information about student success patterns of both of these individual student profiles would be helpful in advising and supporting student success. Also, having this information about academic performance could help the administrators create student support services around specific populations. For instance, a cohort of classes might be created to serve primarily working parents. I could imagine how encouraging it might be to have classmates who had similar demands and lifestyles rather than feeling isolated in the process. Overall, a study like this would provide a more accurate report of student success that would be unique per students within individual academic institutions.

It is time to look at where we are in educational research practices and what is working and what is not. A one-size-fits-all approach to analyzing student success will not provide the entire picture of student performance or demonstrate student needs. Identifying specific performance gaps and which students are likely impacted is crucial to supporting students. Understanding and properly analyzing predictors of student success at higher educational institutions is important for proper academic planning. This information, which should be specific to institutions, could help shape support services, advising practices, orientations agendas, and much more.

The practices both remote and in person learning need to be evaluated for effectiveness, again in a less pandemic-heightened environment. To determine the effectiveness of remote

courses, virtual student services, and their face-to-face counterpart, students will need to provide feedback and success needs to be tracked. This feedback will allow a qualitative perspective from students and an opportunity to tell their stories of the support they received. It will also uncover gaps and areas of needed improvement.

Finally, as the pandemic passes, it is important to remember not only what was lost but what we gained. We gained knowledge of a new modality that is going to widen student access to education. Students gained an opportunity to learn using tools that they might have never used. Faculty likely expanded their instructional depth by teaching in ways they had not experienced in the past. Staff gained a new virtual approach to student services such as offering online orientations, Zoom advising sessions, and Zoom mental health appointments. Higher educational administrators also were tasked to communicate in new ways by having virtual convocations, informational meetings, trainings, and offerings of professional development. These remote courses and virtual student services need to continue as we bring students back to campus. It is now time to create a new normal that merges the best parts of the remote and face-to-face worlds rather than requiring everyone to go back to the way things were.

When forced to create a new way to serve our students, educators rose to the challenge. It was not perfect, but it certainly worked for many. I understand the push to return to the previous in person practices. There are certainly several positives of in person communication, and I predict that enrollment on campus will bounce back eventually because there is still a preference of face-to-face learning for many students. However, let us not forget to serve the population who could continue or even begin to thrive in the remote world.

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## Appendices

## Appendix A



August 5, 2021

To: Mrs Ashley Click

From: University of the Incarnate Word Institutional Review Board, FWA00009201

Ashley:

Your request to conduct the study titled *An Analysis Comparing First Time in College Student Productive Grade Rates and Retention Data from Face to Face Learning Modality to Remote Learning Modality* was approved by exempt review on 08/05/2021. Your IRB approval number is 21-08-001. You have approval to conduct this study through 8/5/2022.

Please keep in mind the following responsibilities of the Principal Investigator:

1. Conducting the study only according to the protocol approved by the IRB.
2. Submitting any changes to the protocol and/or consent documents to the IRB for review and approval prior to the implementation of the changes. Use the **IRB Amendment Request** form.
3. Ensuring that only persons formally approved by the IRB enroll subjects.
4. Reporting immediately to the IRB any severe adverse reaction or serious problem, whether anticipated or unanticipated.
5. Reporting immediately to the IRB the death of a subject, regardless of the cause.
6. Reporting promptly to the IRB any significant findings that become known in the course of the research that might affect the willingness of the subjects to participate in the study or, once enrolled, to continue to take part.
7. Timely submission of an annual status report (for exempt studies) or a request for continuing review (for expedited and full Board studies). Use either the **IRB Study Status Update** or **IRB Continuing Review Request** form.
8. Completion and maintenance of an active (non-expired) CITI human subjects training certificate.
9. Timely notification of a project's completion. Use the **IRB Closure** form.

Approval may be suspended or terminated if there is evidence of a) noncompliance with federal regulations or university policy or b) any aberration from the current, approved protocol.

If you need any assistance, please contact the UIW IRB representative for your college/school or the Office of Research Development.

Sincerely,

Mary Jo Bilicek  
 Research Compliance Coordinator  
 University of the Incarnate Word  
 (210) 805-3565  
[bilicek@uiwtx.edu](mailto:bilicek@uiwtx.edu)

## Appendix B



June 15, 2021

Ms. Click,

The San Antonio College (SAC) Institutional Review Board (IRB) has **approved** your request to use aggregate SAC data for your external research through the University of the Incarnate Word (UIW). This approval is valid through **June 15, 2022**. If additional time is required, an extension may be requested prior to the expiration of this approval, provided that there is demonstrable progress towards completion, that there is no substantive change to the project as described in your research proposal, and that all other requirements outlined in this letter are satisfied.

*Requirements:*

- (1) Reasonable use of SAC resources to complete this research, including personnel on duty, equipment, and time is consistent with college policies (Alamo Colleges Board Policy C1.9.1 and C2.7.1) so long as appropriate acknowledgements and citations are included in published materials.
- (2) The IRB recognizes that the researcher only requests aggregate data; however, during the scope of the project, if the researcher should come into possession of personally identifiable or confidential information, that data must be secured on a non-public device and destroyed as soon as possible when it is no longer required.
- (3) It is the responsibility of the researcher to notify the San Antonio College IRB if there are any changes to this research proposal.
- (4) A copy of your final results must be shared with the San Antonio College IRB.

Please direct all questions and concerns to me. Good luck with your research project!

Sincerely,

A handwritten signature in blue ink that reads "Dr. David A. Wood, Jr."

Dr. David A. Wood, Jr.  
 Professor of Astronomy  
 Chair, Institutional Review Board  
 San Antonio College

cc: San Antonio College Institutional Research Board