Online Student Course Engagement in a Developmental Summer Bridge Program: A Mixed Methods Study

Kaitlyn Machcinski
kmachcinski@wcupa.edu

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Online Student Course Engagement in a Developmental Summer Bridge Program: A Mixed Methods Study

A Dissertation

Presented to the Faculty of the

College of Education and Social Work

West Chester University

West Chester, Pennsylvania

In Partial Fulfillment of the Requirements for

the Degree of

Doctor of Education

By

Kaitlyn Machcinski

May 2022

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Dedication

To my husband Mark, who has been the biggest supporter in this journey. I could not have completed this dissertation without you. I did this program for you, myself, and the family I cannot wait to build with you. You believed in me when I did not believe in myself. Thank you for your constant support, love, and encouragement over the last three years of this program. I knew I could rely on you and our cats to brighten my day after class or a long writing session. To the rest of my family and friends, the laughs have helped me through this journey and your support has been a constant I can rely on. Thank you, especially, to my parents, in-laws, and brother. To my niece and Godson, I knew I could count on your smile and hugs when I needed them most. Finally, to my sister, Dr. Pardini, we started this doctoral journey together and now we are ending it the same way. You have become one of my best friends, and I know we are going to be there for each other moving forward.
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Abstract

Does virtual learning impact student engagement in developmental education? This convergent mixed methods study measures student experience and perceptions during one such bridge program forced online during the COVID-19 pandemic. Using the Online Student Engagement Scale (OSE), I measured students’ perceived engagement levels in the online course (Dixson, 2015). Drawing from self-reflecting journal entries and observations, I measured students’ experience of participation and engagement. Understood through Astin’s (1999) Theory of Student Involvement, the findings of this study showed high perceived and demonstrated engagement in the developmental reading and study skills course. In addition, students struggled with their perceived study skills and finding time to engage with their peers. These results suggest that students can engage in a virtual setting but need structure and time to complete the required work.

Keywords: developmental education, virtual learning, student participation, student engagement
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CHAPTER I: INTRODUCTION

Introduction

When I was in my senior year of high school, I got a note to go to the guidance office. As a quiet and anxious teenager, I hated my name being read aloud in front of the class and having to get my belongings to walk down to the office. However, I was excited about this appointment because I knew we would be talking about college choices. I had my hopes dashed that day as a guidance counselor whom I had only met once before told me I should consider other options besides college due to my average grades and poor SAT scores. I took the SAT four times, barely improving each time. My first-choice school initially rejected me, but then a few weeks later, they admitted me on the condition of completing a five-week developmental summer bridge program.

When I started this program, I still had many doubts about myself, but as the course continued, I succeeded in coursework for the first time in my life. I even started to build the confidence to participate in class. The program I completed was in-person and, until graduate school, I had always taken my courses in-person. A few years ago, I took an online graduate course on digital storytelling and was able to open up more in that one course than in all the years of in-person classes, all because the course was online. I became interested in developmental education and students’ online engagement levels for these reasons. This study aims to contribute to research on developmental students’ participation and success, particularly in the ever-growing realm of online education.

Background

Since higher education in the United States began, developmental education has existed in different forms, including college preparatory departments, remedial classes, and other
academic interventions (Boylan, 2001; Bunner, 2018; Wyatt, 1996). Since the civil rights movement, developmental education and summer bridge programs have helped disenfranchised and underrepresented students access and succeed in higher education. Additionally, numerous studies have shown the success of summer bridge programs by showing how they contribute to higher student GPAs (Strayhorn, 2011), give students the necessary academic and social skills needed for college success (Baker, 2018; Stolle-McAllister, 2011), and lead to degree completion (Bir & Myrick, 2015; Murphy et al., 2010).

As the direction of developmental education and summer bridge programs change, online components are becoming more popular. Knowing how students engage with course material and their peers in online learning environments will be essential. With the COVID-19 pandemic and many institutions switching to virtual modalities, it was appropriate to study summer bridge programs and online engagement.

Researchers have studied student participation for over 50 years (Rocca, 2010). They have found that multiple factors impact a students’ likelihood to participate in a face-to-face (FTF) course. These factors include a student’s age (Howard et al., 1996; Weaver & Qi, 2005), instructor rapport (Frisby et al., 2014), class size (Karp & Yoels, 1976; Weaver & Qi, 2005), self-esteem and peer opinion (Morrison & Duane Thomas, 1975; Tadayyon et al., 2016; Weaver & Qi, 2005), among other factors. Less is known about distance education and engagement, however. Forms of distance education have existed for a long time (Marshall Crotty, 2012), such as mailing course materials; however, virtual classrooms are a relatively new concept and less studied compared to in-person courses. Research into engagement in online courses (Bolliger & Halupa, 2018; Dixson, 2015; Handelsman et al., 2005; Kuh & Umbach, 2004) is relatively new, and more studies are needed to increase participation levels in virtual classrooms.
**Purpose of Study**

This study’s purpose was to add to the growing literature on student engagement in distance education while adding a new component: online student engagement in developmental students. As stated above, FTF courses are the topic of most participation research. The results of this study will help faculty, staff, and other educators involved in developmental education increase their student engagement. Furthermore, student involvement is necessary for student success (Astin, 1999). Specifically, this study aimed to measure how students perceived their engagement levels and demonstrated their engagement in a virtual summer bridge course through the lens of the Theory of Student Involvement (Astin, 1999).

The particular summer bridge program that this study researched was online due to the COVID-19 pandemic, which was common during the 2021-2022 semesters (Bustamante, 2020). Many colleges and programs returned to in-person as the pandemic became more manageable and vaccines became more widely available. The program studied will most likely return to in-person instruction for the Summer 2022 cohort; however, program faculty and staff may implement online components of the program and courses that worked in future semesters. Therefore, it was propitious to study and learn from the online semesters to improve distance education and online components of FTF courses in developmental programs.

**Rationale for Study**

COVID-19 made online education more common when many schools and colleges decided to go virtual for public health. The pandemic forced 98% of higher education institutions to virtually complete the Spring 2020 semester (Bustamante, 2020). Even into the Fall 2020 semester, the majority of colleges were either fully online (10%), primarily online (34%), or hybrid (21%), with only 4% returning to entirely in-person learning (Elias et al., 2020).
Before the pandemic, about a third of students took at least one online class (U.S. Department of Education, 2018). Students may be likely to enroll in one in the future now that they have experienced online classes (Hass & Joseph, 2018; Meyer, 2014), even though some students experienced Zoom fatigue through the pandemic (Fauville et al., 2021). Therefore, the need for online courses will most likely grow once the fatigue of online learning wears off (Castro & George, 2021). Distance education has many benefits, including time management, convenience, and flexibility (Hass & Joseph, 2018; Song et al., 2004), and it is not going away. As the world continues to adjust after the pandemic, the popularity of online education will continue to grow, just as it did before COVID-19. Thus, the primary rationale for this study is to provide research on online college course engagement, specifically within developmental education.

**Research Questions**

This study aimed to measure student engagement in the virtual classroom to inform future online developmental curricular practices. This study used two measurements in distance education: (1) students’ perceived engagement levels and (2) students’ demonstrated engagement levels. The main research question and sub-questions for this study were:

1. How engaged are first-year developmental students in an online summer bridge program course?
   a. What are students’ perceived levels of engagement?
   b. In what ways are students demonstrating engagement?

By focusing on both perceived and demonstrated levels of engagement, I was able to get a more complete picture of student involvement in the course instead of looking at demonstrated engagement and perceived engagement separately.
**Rationale for Methods**

This study used a mixed methods approach, combining a qualitative case study with a quantitative survey design. The reason for mixed methods was simple: I could not use qualitative or quantitative methods alone to answer the research question. The qualitative instruments provided data for the demonstrated engagement levels, while the quantitative instrument measured the perceived levels of engagement.

For the qualitative portion of this research, I decided on a case study approach laid out by Merriam (1998), which draws from Stake’s (1999) constructivist framework and details how to design a case study for a new qualitative researcher. The steps in designing a case study this way include: “conducting a literature review, constructing a theoretical framework, identifying a research problem, crafting and sharpening research questions, and selecting the sample (purposive sampling)” (Yazan, 2015). The quantitative portion of this research will be a survey research design; however, I did not create the survey instrument. Instead, I gained permission to use a predesigned instrument. Dixson (2015) developed the Online Student Engagement Scale (OSE) and found it “will significantly and positively correlate with application learning student behaviors in an online course” (p. 150). This instrument is a reliable way to measure perceived student engagement.

**Significance of Study**

Most students chose a FTF classroom format before March 2020, and there are existing studies to show the importance of student participation in those courses. The original intent behind this study was to help improve engagement in online courses because several students took advantage of online learning before the pandemic. After March 2020, online learning became a top topic in education. This study may help developmental educators design their
virtual lessons with student engagement in mind, whether entirely online, hybrid, or FTF using online components. This study is critical to the developmental education community, where students need to become involved in their learning to succeed in a college setting. This study may have implications that educators in a secondary education setting could use; however, college environments will benefit the most from this research.

**Limitations**

This study took place virtually, given the continued context of the pandemic, which has proved challenging for researchers. “Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus” (World Health Organization, 2021, n.p.). COVID-19 was first reported in the United States in January 2020, and by the end of March, the United States had the most confirmed cases in the world (Bryson Taylor, 2021). Most states ordered school closures and a switch to virtual learning for the rest of the 2020 academic school year in March 2021 (Map: Coronavirus and School Closures, 2020). Even though vaccines were available, the decision to conduct the program virtually was made months in advance since the University decided to keep all classes virtual until Fall 2021. The program was conducted entirely virtually, using the institution’s learning management system, zoom for synchronous learning, and asynchronous activities due to COVID-19.

Participants in this study were bombarded with emails daily from the faculty and staff running the program; that made it easy for an email about a research study to get lost in a student’s inbox. The entire program was virtual, making it difficult to connect with the potential participants of this study. I was fortunate to have the majority of the professors’ support, who assisted in the recruitment of this study; however, this is not the same as researchers who go into FTF classrooms to conduct research.
Additionally, conducting a virtual study while the students complete two classes and have other virtual commitments can overwhelm participants and discourage them from participating. When designing this study, I took this into account; student participation in the instruments took less than 10-minutes. For example, I embedded questions I would have asked in an interview into a class assignment for all students. Therefore, students did not have to exert any more energy than expected in their course to participate in this study.

Finally, the program studied was a five-week summer bridge program, making time a huge factor. The data collection time was short. I wanted students to feel comfortable in their classrooms before collecting data on engagement, leaving about three weeks for data collection. I planned far in advance when data would be collected each day to combat this. In addition, I only asked students to complete the survey, and I incorporated interview questions into class assignments, so students would not have to give up any extra time to participate in this study. A comparison of multiple summer bridge programs would have been this study more generalizable; however, this case method allowed me to look at one program in-depth. I recommend that future researchers looking to replicate this study do so at multiple institutions.

**Definition of Terms**

*Face-to-Face Classrooms*

Face-to-face (FTF) or in-person learning refers to students physically meeting in a common space, typically a classroom, to learn (Jose et al., 2019; Nemetz et al., 2017). I will use FTF and in-person interchangeably.

*Online Learning*

Online learning refers to any virtual component of a classroom, and online classes are defined “as courses where most, if not all, of the content is delivered online” (Holley &
Taylor, 2009, p. 257). Online learning and virtual learning will be used interchangeably and refer to asynchronous or synchronous classrooms taking place via the Internet and not FTF. Online learning is also called Distance Education. “Distance education is an instructional delivery system that allows students to participate in an educational opportunity without being physically present in the same location as the instructor” (Johnson & Aragon, 2003, p. 31).

**Participation, Engagement, and Involvement**

Three terms, participation, engagement, and involvement will be used to reference the effort, whether physically or mentally, that students put into their learning. More specifically, I will describe the physical aspects, such as talking in class or using the chat feature on Zoom (Fritschner, 2000). Engagement will typically go beyond participation to include students’ mental effort in a classroom environment, including coming prepared to class, staying focused while others are talking, and completing homework (Dixson, 2015). Finally, involvement in the classroom will include both participation and engagement levels; however, involvement will frequently reference their involvement in the educational experience as a whole (Astin, 1999).

**Developmental Education**

According to Boylan (2001), “Modern developmental education involves a range of services designed to promote personal and academic development” (p. 2). This study’s program had many services to assist students, such as mandatory tutoring, academic advising sessions, academic success workshops, peer mentoring, and small class sizes. The program studied is also considered a summer bridge program. Students take classes at an institution in the summer after high school before admission in the fall; however,
not all summer bridge programs are considered developmental education (Grace-Odeleye & Santiago, 2019).

**Asynchronous and Synchronous**

Asynchronous learning refers to learning done not in real-time, while synchronous learning refers to students physically meeting, even if that is on Zoom. Some online classes are completely asynchronous, which means the class does not meet and may communicate via email and discussion posts. Some online classes, such as this summer bridge program, were synchronous, meaning each class met virtually in real-time via Zoom. Most courses will involve asynchronous work, where students are not working together in real-time (Apple et al., 2011).

**Summary**

I was very excited to study online student engagement after my positive experience in a developmental program and my separate experience in online courses. In addition, the resources provided to me as a developmental student contributed to the success I have had in my undergraduate and graduate careers. COVID-19 imbued this topic with great importance as many educators have had to use online learning tools to engage students in a virtual setting. This study aimed to inform developmental online courses by studying students’ perceived and demonstrated engagement levels.
CHAPTER II: REVIEW OF LITERATURE

Introduction

This study focused on online class engagement in a developmental summer bridge program. Therefore, it is important to understand the existing literature on developmental education, the motivators for student participation in college courses, and online curricula. In addition, the COVID-19 pandemic rapidly increased the popularity of online engagement in college courses and cannot be left out of the conversation. Themes emerged through this review, including the growth of developmental education, student participation in coursework, and the importance of educators understanding how students learn best in virtual settings, as the COVID-19 pandemic highlighted. At the end of the chapter, I will articulate the theoretical framework, Astin’s (1999) Theory of Student Involvement, which was central to this study.

Developmental Education

Background of Developmental Education

“Developmental education programs typically provide courses and learning laboratories” (Boylan et al., 1999). Today, developmental education is understood as different approaches to aid in student learning, including remedial coursework, tutoring, success coaching, advising, various academic interventions, preparatory coursework, and the list continues. Many developmental education programs are designed as summer bridge programs. Summer bridge programs can be required for a student’s admission to a university or be a voluntary program that students enroll in to enhance their college readiness (Bettinger et al., 2013; Grace-Odeleye & Santiago, 2019).

These programs and their different learning tools are nothing new and date back to the early days of American higher education (Boylan, 2001; Bunner, 2018; Wyatt, 1996). Professors
and college faculty have always complained about students’ lack of reading and study skills when entering higher education (Wyatt, 1996). In fact, many institutions had preparatory departments whose job was to teach students the skills needed to enroll in for-credit courses at an institution. As Wyatt (1996) explained, these preparatory courses were much less about student academic ability and more about a student’s ability to pay, affecting student admissions. If a student could pay the admission but lacked the skills, then these departments would help build those academic abilities.

**Arguments Against Developmental Education**

Developmental education is not without controversy. One of the main arguments against developmental education is that state institutions paying for the education that secondary schools should have covered (Ignash, 1997; Williams & Sitwatu, 2017). There is also disagreement about whether some of the interventions help students or not. For example, Shields and O’Dwyer (2017) found that students that took remedial courses were less likely to complete a bachelor’s degree. This idea contrasts Williams and Sitwatu (2017), which found that completing these courses made students more likely to graduate. Sanabria et al. (2020) found a middle ground between these two views, including the likelihood of students not graduating if they fail a remedial course. However, they argued we should not remove these courses, instead educators should structure remediation differently, adding that “a one-size-fits-all approach would not be appropriate in these contexts” (p. 478).

This controversy has also argued for developmental education reform. In 2013, Florida passed a bill, SB 1720, that had students take introductory courses versus remedial courses, which reduced costs to students, especially students of color (Mokher et al., 2021). Some educators feared that SB 1720 would prioritize costs over student needs since these remedial
courses were typically in place to help prepare students for college-level work (Nix et al., 2020). SB 1720 exempted around two-thirds of Florida students at state colleges from taking remedial courses. Zhao et al. (2022) found that students who were still required to participate in the developmental math and English courses were more successful in those courses than before the reform. Hu et al. (2019) studied both exempt and non-exempt students and found that enrollment in developmental courses for math and English decreased sharply; however, students in those courses did well, also supported by Zhao et al. (2022). Interestingly, introductory English courses remained consistent compared to before SB 1720; however, math scores decreased (Hu et al., 2019). This mix of results would suggest that developmental education reform could be beneficial for students; however, it needs to be done correctly and not in haste.

**Effectiveness of Summer Bridge Programs**

There have been multiple studies completed to show the effectiveness of summer bridge programs in student success. Bir and Myrick (2015) found that students’ participation in a summer admissions program increased their likelihood of success in college and graduation. Developmental programs help disenfranchised students as well. Baker (2018) studied ACT 101 programs, which are programs in Pennsylvania designed to help students from lower socioeconomic statuses. They found that developmental programs prepared students for college by increasing their academic skills, will, and self-determination. In a similar study using qualitative methods, Stolle-MacAllister (2011) found that summer bridge programs helped build students’ skills in three areas: academic, social, and professional. Finally, Strayhorn (2011) found that summer bridge programs improved student GPAs compared to students that did not participate in the program and significantly helped students of color and students from lower socioeconomic status.
One of the goals of summer bridge programs is to increase college readiness. Study skills are needed to impact academic performance (Chilca Alva, 2017), and these types of programs can increase those skills for students. Byrd and MacDonald (2005) found that developmental education courses increased college readiness. College readiness for students included study skills, time management, and focusing on set goals. Developmental education can help students succeed; however, student engagement is necessary, and students must be involved in their own learning to be successful in college.

**Student Participation**

*The Importance of Participation*

Participation in courses has been a significant focus of research since the 1950s, as Rocca (2010) pointed out in an extensive review of the literature. There are many reasons for the importance of engagement and why classrooms are moving away from traditional lectures to a more student-centered approach (Girgin & Stevens, 2005; Handelsman et al., 2005; Kuh & Umbach, 2004; Parker, 2005). There is a need for more debate and conversation to engage students to help them build the skills needed in society (Hess, 2000; Hess & Gatti, 2010; Parker, 2005). I argue, and the literature will show that grades are less important than creating students who know how to engage with their peers, have constructive conversations, and become involved in the democratic process; however, there is also research that will argue that higher involvement levels will increase student grades in a course.

**Using Participation to Create Democratic Citizens.** One of the reasons student participation is essential is to create a more democratic society, where discussions lead to collective solutions and arrangements. Girgin and Stevens (2005) studied just that at a Turkish university, where students are not used to participating in class and speaking their minds outside
the classroom. They cited three reasons why a classroom should have a more student-centered approach, including creating more democratic citizens. Another reason was that students prefer this mode of teaching; finally, they connect this learning to social constructivist theory.

Uncomfortable conversations will be required to create more democratic citizens, and getting students engaged in these types of conversations can be challenging. Hess and Gatti (2010) argued that this is necessary: “teaching controversial issues through discussion strengthens democracy because of the causal relationship between discussion and the cultivation of tolerance” (p. 22). This type of participation and conversations are complex but help foster the skills and knowledge necessary for students to become democratic citizens (Hess, 2000; Parker, 2005). There are multiple ways to spark engagement through debate and controversy, including supreme court cases (Hess & Marri, 2002), having small group discussions (Hess, 2000), and preparing educators to facilitate these types of discussions (McAvoy & Hess, 2014).

Similar to participation in the classroom leading to more democratic citizens, Kuh and Umbach (2004) suggested that engagement leads students to develop more character growth. Interestingly, they found that 82% of students “indicate[d] that their college experience contributed substantially (‘very much’ or ‘quite a bit’) to their ability to work effectively with others” (p. 44). While students care about their grades, most research goes beyond that and includes engagement being essential to creating more democratic citizens.

**Participation & Student Grades.** Handelsman et al. (2005) found that student engagement in a course led to higher grades and overall more learning even though there are arguments over how beneficial grades are as a predictor of student success. Also, they found that extrinsic motivation is an essential factor for student engagement, and this can lead students to care more about the learning process versus the grade. A way to do this is to help students
become emotionally engaged in class, which “may include teachers’ instilling attitudes or developing a culture of learning, fun, and interaction in the classroom” (p. 190). Tayebinik and Puteh (2013) found similar results that engagement led to higher grades in an online setting.

There is a relationship between student grades and engagement in a given course, and other motivational factors can lead to deeper learning. Grades can be a good motivator for students. Bolliger and Halupa (2018) found that students’ desire to receive high grades encouraged them to engage with the course material and be involved in their learning. Grades are a form of extrinsic motivation and can be helpful as a motivator if students are not intrinsically motivated by the course material (Handelsman et al., 2005).

**Characteristics and Influence on Student Participation**

There are many reasons why a student will be more or less likely to participate in a college course. These include a student’s age (Howard et al., 1996), instructor rapport (Frisby et al., 2014), student self-esteem (Morrison & Duane Thomas, 1975), class size (Karp & Yoels, 1976), a select few students dominating the conversation (Weaver & Qi, 2005), and other factors contributing to avoidance strategy in students (Tadayyon et al., 2016). One of the more known studies is the one completed by Karp and Yoels (1976), which focused on class size and participation but found many other contributing factors why students will or will not participate in a course. This study observed ten classes and a questionnaire for both students and teachers. When it comes to class size, Karp and Yoels (1976) found that classes with higher amounts of students had less interaction than courses with lower numbers of students. Additionally, they found that regardless of class size, a small percentage of students in each dominated the conversation. Lastly, they found that most students could tell from the beginning of the semester if the professor appreciated participation, which affected their willingness to contribute.
Howard et al. (1996) replicated Karp and Yoels’ (1976) findings. However, they had a more significant focus on student age and participation using a modified version of the questionnaire, similar observation techniques, and interviews. Their findings backed up the previous research on the idea that a small percentage of students will account for most participants in a given class. They also found that non-traditional students (above the age of twenty-four) are more likely to participate than traditional-aged students (below the age of twenty-four). Through the interviews, students gave the following reasons for not contributing in class: confidence in the answer, confidence in subject matter, not being prepared, and being in a large class (Howard et al., 1996).

Another reason students may be less likely to participate is professor rapport (Frisby et al., 2014). This study focused on student apprehension and instructor rapport and related to student participation in mostly traditional-aged students. They found that students with higher levels of participation apprehension were less likely to participate. They also found professor rapport to be a critical factor in classroom participation. Autonomy helps: “Thus, when students perceived that they were allowed by their instructor to be autonomous, and that their competence or autonomy were not under scrutiny or evaluation by the instructor, they felt safe enough to participate in the classroom” (Frisby et al., 2014, p. 118). Students with apprehension issues, or low self-esteem, may be more likely to sit in the back of the classroom and less likely to contribute to the conversation (Morrison & Duane Thomas, 1975).

Weaver and Qi (2005) focused on the many factors that may contribute to a student’s participation or lack thereof. They found that students agree there is a small percentage of students in the class that dominate the conversation, peer pressure and group norms do impact the amount a student will participate in class, students in higher age groups are more likely to
participate, preparation has a positive correlation with participation, students’ confidence levels affect participation, and faculty interaction outside the class is significant for involvement in the classroom. “This abandonment of a particular task, exercise, or any type of classroom production because of its difficulty is known as avoidance strategy” (Tadayyon et al., 2016, p. 2). The researchers listed similar reasons for students not participating and enacting avoidance strategies, including peer pressure, student anxiety, shyness, lack of topic knowledge, and language comprehension. Additionally, they provided strategies to help educators combat avoidance strategies. They included: introducing anxiety strategies into the classroom, motivation, being supportive and creating a supportive environment, implementing group work, and moving students into production knowledge by allowing them to practice what they learn (Tadayyon et al., 2016).

Another factor that may impact participation in the classroom is the varying definitions of the term by faculty and students. The word may have different meanings to different groups of people. Fritschner (2000) defined participation through student-faculty views and studied participation in lower and upper-level undergraduate courses. Through qualitative research methods, including observation and interviews, six definitions of participation arose:

From the faculty interviews there were six identifiable levels of student participation in the undergraduate classroom: Breathing and staying awake were level one. Level two included students who came to class, took notes, and did the assignments. The third level included writing papers that were reflective and thoughtful. Level four included asking questions in class, making comments, and providing input for class discussions. The fifth level was doing additional kinds of research or coming to class with additional questions,
and level six included oral presentations where the students themselves became the teachers. (Fritschner, 2000, p. 354).

Also, this study emphasized previous research that a few students did the majority of the talking in courses (Karp & Yoels, 1976; Howard et al., 1996); however, they added there are significant differences between levels of courses. Higher-level courses had more participation overall than lower-level courses, and more students were part of the group that monopolized class participation in the higher-level courses. According to Fritschner (2000), it also helps if they remove the academic barriers between teachers, typically perceived as all-knowing, and students, typically seen as novices, by implementing self-disclosure: “the students felt that self-disclosure made professors seem ‘like one of us’ and more approachable” (p. 358). A more approachable professor will help students gain confidence and want to participate in a course.

**Participation in Online Courses**

Hrastinski (2009) developed a learning theory connecting online learning and participation. With connections to constructivism and collaborative learning, the theory suggests:

- Online learner participation (1) is a complex process of taking part and maintaining relations with others,
- (2) is supported by physical and psychological tools,
- (3) is not synonymous with talking or writing,
- and (4) is supported by all kinds of engaging activities … If we want to enhance online learning, we need to enhance online learner participation (p. 81).

The main points highlighted in this learning theory are that participating involves the connection and building relationships with others; however, it was not only talking and writing. In other words, counting discussion posts and tracking how many times a student speaks is not enough to
measure participation. The reason is that participation involves many activities, including reading, reflecting, and listening.

Tayebnik & Puteh (2013) argued that student participation leads to passing grades in online courses. They found that students who passed the course “significantly had great participation in online interactions” (p. E200). One of the most significant flaws of that study is that only passing students were participants; however, this would agree with previous research about the importance of participation in courses. In general, the impact of participation has not been a focus in online courses as it has been for FTF courses. Best practices and strategies for virtual modalities are discussed most in online curricula.

One of the main focuses of online participation is synchronous versus asynchronous communication. Synchronous collaboration refers to students working together and communicating in real-time. This communication used to be done in person; however, with the development of new online tools, these can now be done entirely online. For asynchronous communication, students are not talking in real-time (Apple et al., 2011). One example of this type of communication includes Hew and Cheung’s (2008) research, which focused on techniques to increase asynchronous participation; these included seven facilitation techniques, which helped create more in-depth discussion posts. These techniques included “(a) giving own opinions or experiences, (b) questioning, (c) showing appreciation, (d) establishing ground rules, (e) suggesting new direction, (f) personally inviting people to contribute, and (g) summarizing” (p. 1117).

Along with these techniques, using facilitators to monitor and encourage students to engage in the post helped make meaningful asynchronous communication (Hew & Cheung, 2008). In a study completed by Oztok (2013), asynchronous and synchronous methods in an
online course were explored. They argued that these two methods should be used together versus one or the other because synchronous methods created more connections between classmates, while asynchronous provided space for more in-depth and well-thought-out answers.

Yukselturk and Top (2013) studied female, male, working, and non-working in a course that utilized both synchronous and asynchronous means of communication in a study that focused on student characteristics and participation in an online course. The authors found that participation was a significant factor in learning in an online course regardless of these characteristics. Bolliger and Halupa (2018) used different instruments, including the Online Student Engagement Scale (Dixson, 2015), to measure student engagement in distant learning environments at all levels of post-secondary education. They found a strong correlation because of transactional distance and student outcomes. Transactional education refers to the perception of distance, which has to be overcome by educators and students for learning to occur (Moore, 1991). “When students experienced a lower level of transactional distance, they were likely to feel engaged and satisfied; they also perceived more progress towards their learning goals and success” (Bolliger & Halupa, 2018, p. 312). Along with their findings connected to transactional distance, they also found females to be more engaged than males and graduate students to be more involved than undergraduate students, supporting previous research on student participation.

Dixson (2015) created the Online Student Engagement Scale (OSE) through a series of pilots, tests, and a study. Three key ideas motivated the research to create this scale: social constructivism, the Community of Inquiry (CoI) model, and student engagement in online learning. The researcher highlighted the importance of interaction in the learning process. With the CoI, the research focused on social, cognitive, and teaching presence in education. Finally,
Dixson (2015) highlighted the importance of defining social engagement. This research found that “the OSE scale offers an easy, valid, and reliable way to measure students’ engagement in online courses” (p. 152), which is essential for assisting in course design and giving feedback to instructors (Dixson, 2015). This type of survey did not exist prior to the OSE; instead, researchers would have to combine surveys to study both student engagement and online courses (Dixson, 2010).

**Online Curriculum**

**The Current State of Online Curriculum**

Online learning has changed drastically over the past two decades with the evolution of the Internet. Johnson and Aragon (2003) defined distance education as “an instructional delivery system that allows students to participate in an educational opportunity without being physically present in the same location as the instructor” (p. 31). While this definition is still true today, almost two decades later, there are several tools that educators can use in distance education that did not exist at the beginning of the century. Holley and Taylor (2009) concluded that online curriculum leaders should value learning offline and in the community when considering student engagement in these courses. This idea connects to Johnson and Aragon’s (2003) original purpose, which was to address the challenges of online learning and go beyond replicating a traditional classroom online as strategies for distance education.

Holley & Taylor (2009) sought to bring student experience into the conversation on online programs and researched the influence outside sources, such as students’ peers, have on a students’ experience through a descriptive qualitative study. This study found that students’ experiences outside their online program had them much more engaged than their programs. This research was connected to constructivism, as participation and involvement are a large part of the
learning process. Another interesting finding from this study was that some online learners are not entering their courses to find a new profession but rather to improve their skills in their current one, which means curricula should help these students further their careers. In a more recent study, Tasker and Cisneroz (2019) found results that would challenge Holley and Taylor’s (2009) findings.

Students have grown up with the in-person course format, and most prefer it (Meyer, 2014), even though online coursework can be just as practical (Hass and Joseph, 2018). Tasker and Cisneroz (2019) found that students prefer writing and traditional classroom sessions online compared to the number of students that preferred project-based learning. They had interesting findings that more than half of their participants preferred traditional assignments, such as reading, writing, and researching for their courses. Both Holley and Taylor (2009) and Tasker and Cisneroz (2019) argued that both traditional assignments and students’ professional colleagues and peers could and should be part of the curriculum.

While there is disagreement and discussion on the best methods for online curricula, there have been best practices and strategies for higher education professionals and distance education instructors (Abe & Jordan, 2013; Jose et al., 2019; Oliveira et al., 2015; Shepley, 2009). Distinguishing between the two groups is necessary, as higher education professionals typically work in an administrative capacity while instructors are in the classroom with the students. However, both groups can benefit from basic online curriculum knowledge as generations of students become more tech-savvy and reliant on technology.

Chernikova (2016) argued that there are three strategies for attracting and helping students be successful in learning, one of which includes offering online delivery modes when institutions are frantically recruiting students: “In a time that could be described as a ‘perfect
storm’ in higher education, faculty and administration have been exploring all possible tools to attract students and help them stay on a curriculum path so they can graduate” (p. 132). Now more than ever, it is vital for higher education institutions to implement these strategies as they fight for student enrollment and retention.

Online delivery instruction allows students who work full-time or has other issues stopping them from participating on-campus to complete programs otherwise (Chernikova, 2016). As for the online course itself, Swan et al. (2012) argued that using two different frameworks will help improve the quality of online education. Those frameworks include Quality Matters (Quality Matters, 2016) and Community of Inquiry (Arbaugh et al., 2008). The Quality Matters framework is a peer review process that focuses on eight different categories to determine the quality of online and blended courses. The Community of Inquiry framework focuses on the “cognitive, social, and teaching presence” of asynchronous online courses (Oztok et al., 2013, p. 88). In that study, courses that underwent both of those measures had improved student outcomes (Swan et al., 2012). Therefore, it is crucial to evaluate online courses and continuously try to improve them. These two frameworks, primarily used together, have been shown to improve online coursework (Swan et al., 2012). With the history of online curriculum and the evaluation of curricula covered, it is essential to look at examples of online instructional design.

**Examples of Online Curriculum**

A great deal of research exists comparing online and face-to-face (FTF) classes, including grades (Mentzer et al., 2007; Nemetz et al., 2017), perception (Driscoll et al., 2011; Gorman & Staley, 2018; Jose et al., 2019), and advantages/disadvantages (Hass and Joseph, 2018). Mentzer et al. (2007) found that students were more likely to have higher grades in the
FTF sections of the courses versus the online because online students were more likely to be missing assignments. On the other hand, they found that online students were more likely to support each other through the course. This study was quasi-experimental with random assignment into the FTF or online groups, which is usually not possible with these educational studies. Also, the results are more valid as both courses had the same experiences, including the same professor, due dates, and grading rubrics. In a similar study, Nemetz et al. (2017) found no significant differences in grades among FTF and online students. They argued that regardless of delivery mode, it was most important for students to succeed in the course, which would relate to Astin’s (1999) Theory of Student Involvement. The researchers admit that course grades were relatively high for the particular studied course, which questions whether their results would pertain to a high-risk class with a high drop, withdrawal, and failure rates; however, the results of Mentzer et al. (2007) would back up that claim.

Hass and Joseph (2018) identified numerous advantages and disadvantages to distance education regarding student perception of online learning. The benefits mostly revolved around time and convenience, with the obstacles including lack of faculty and student interaction and course design. They also found that the majority of students who had previously taken an online course were satisfied and would be likely to take another. Driscoll et al. (2011) agreed with the findings that there is no difference in student outcomes and satisfaction in an online course when other variables are considered, such as student age and GPA. They argued that similar studies must look at the controlling factors. There are many reasons students would be more likely to take an online course, including being working, non-traditional students. While Hass and Joseph (2018) attempted to answer perceptions of ease for online classes, the term easy was not defined
well. Even though almost 40% of participants agreed that an online course is more accessible, it is possible these results would be interpreted differently by different readers.

Gorman and Staley (2018) found that students preferred online workshops for library research when speaking about campus resources. Students had better test scores and reported feeling more comfortable with research because they could learn the material at their own speed. One reason for preferring an in-person workshop is having a librarian there to assist when questions arose. However, many universities have a live chat and virtual librarians available beyond traditional work hours, so students would still have access to a person in real-time when questions arise. Gorman and Staley (2018) argued that these results imply that online library instruction can help make students more aware of the databases available to them, assist them in their course assignments, and make them more confident as researchers.

Jose et al. (2019) hypothesized that students’ learning styles would inform their decision to take an online course. Instead, they found that learning styles had little impact on students’ course delivery choices. In a similar study, Daughenbaugh et al. (2002) hypothesized that introverted students would be more likely to enroll in an online class based on their personality type. They were surprised to find that extroverts were more likely to enroll in online courses, and students with more forceful personalities were more likely to find satisfaction in distance education. What impacted this choice the most was the flexibility and convenience of an online course; interestingly, they did find that collaborative learners preferred FTF classes, which raises the question of whether online instructors are utilizing the many online collaboration tools available to them (Jose et al., 2019).

Additionally, Daughenbaugh et al. (2002) found that in-class students were more likely to be satisfied with the classroom environments when compared to online course students. Jose
et al. (2019) also brought up the very valid misconception of online courses: they save time. Students do not need to commute for an online course; however, they argued that this is a misconception as outside coursework can build up. Students may have to teach themselves the material in distance education. While this conflicts with Gorman and Staley (2018), who studied online workshops, that study did bring up the valid point of having a person there to assist virtually when questions arose, which students do not always have when taking an online course. Through these examples, one can see the many strategies in the online curriculum and what is working and not working therein. These should be used as a baseline for best practices and future research.

**The Use of Social Media in Online Curriculum**

The use of social media in the classroom is another interesting factor in the online curriculum discussion. Social media has and will continue to grow with most students using it regularly in their daily lives, with current students using it from one hour a day and others using it up to ten hours per day (Seemiller & Grace, 2016). Abe and Jordan (2013) put together a best practice guide for using social media in the college classroom. They argued for social media to be part of the curriculum and said it would enhance learning. The benefits include increasing real-time student engagement inside and outside the classroom. The challenges include (1) assuming all students are on social media, (2) knowing how to use the platforms, and (3) mixing students’ professional and personal lives in academics. Heiberger & Harper (2008) argued that students use active learning techniques daily when they are on social media, and these skills can be transferred to the virtual classroom.

Other studies, such as Camus et al. (2016), argued against replacing traditional learning management systems (LMS) with social media platforms to increase productivity and student
engagement. That study demonstrated that Facebook would be a more suitable option than the institution’s LMS. They found that students were more likely to engage in the Facebook group than the traditional LMS. The participants were much more conversational with each other in the Facebook group. Meishar-Tal et al. (2012) had almost identical results with a group of fifty students in a course. The main benefits from that study were “interaction with their colleagues, communication with the instructor, and correlation with their learning style” (p. 40). Camus et al. (2016) backed up the claim Meishar-Tal et al. (2012) made in regards to social media being a better platform than the LMS for the purpose of online student engagement.

With the use of social media comes risk, however, including study privacy, which both studies address (Camus et al., 2016; Meishar-Tal et al., 2012). Students do not typically mix their personal and academic lives when using the LMS; they can by using a social media platform. Privacy and mixing personal and professional lives may be challenging in social media and online curricula. However, they are not the only challenges of the online curriculum.

**The Challenges of Online Curriculum**

There are many benefits to online learning, including convenience, flexibility in scheduling, and the ability for students to go at their own pace. However, some challenges cannot be ignored that are involved in distance education (Hew & Cheung, 2008; Meyer, 2014; Oztok et al., 2013; Song et al., 2004). One of the most substantial issues with online learning is student engagement and participation.

First, there has been much discussion on which type of conversation is best for online courses: synchronous or asynchronous. Since asynchronous communication is a more popular method of communication in an online class, Hew and Cheung (2008) studied and reported on ways to improve the quality of those discussions. They found one quick way to do this is to have
students act as facilitators of the discussions, leading to more in-depth responses. Facilitators were in-charge of discussion ground rules and monitoring student engagement. Oztok et al. (2013) argued that instead of using one or the other as a form of discussion, these methods could be used in conjunction with the best results in distance education. They found that while synchronous modes of communication help build community and help students get instant responses, the asynchronous means of communication were longer and more thoughtful responses. They stated, “If students are willing to engage in both modes, we argue that this affords an increased opportunity for meaningful learning to occur” (Oztok et al., 2013, p. 92). These findings do not undo Hew and Cheng’s findings (2008); instead, it offers an alternative to this one approach to online learning.

Song et al. (2004) identified the following challenges for students completing online courses: lack of community, technical issues, and understanding course goals. Also, they found that participants had to be individually motivated, and the course design structure was vital for success. The lack of community is still a common theme in online courses. When it comes to course design, technical problems are less of an issue over fifteen years later. Oliveira Neto et al. (2015) argued that audio learning is better for online students than text-based learning, agreeing with previous findings that students need more interaction in these courses to be successful.

Meyer (2014) advocated for digital innovation when discussing distance education but stressed that innovation is not the solution to all education problems. In other words, just because we have all of these new digital tools, that does not mean the use of them will be the right intervention for a given problem. One of the significant challenges with distance education is that most students prefer a FTF format, and that is because it is all students know and what has been done in elementary and secondary education for most students (Hass & Joseph, 2018;
Meyer, 2014). In addition to the characteristics of a student, the design of a course can also hold students back. Poor instruction, course design, lack of online discussion, and unclear expectations or communication from the course instructor can be challenging in online courses. This challenge can lead students to not be successful in an online course and refrain from taking another one in the future. Another downfall, as outlined by Karacaoğlu (2018), is the inability to receive instant feedback from professors or miscommunication by using digital means. Finally, there is a fear that students will not take the course seriously enough if it is in an online format (Hass & Joseph, 2018). The online curriculum continues to grow and has many advantages that go along with it, but it is important to keep these challenges in mind when designing online courses.

**The Advantages and Future of Online Curriculum**

There are many advantages to an online curriculum as well. Hass and Joseph (2018) put those advantages into four categories: “time saving, convenience, flexibility and the course being easier” (p. 233). On top of that, Karacaoğlu (2018) notes that another advantage of online learning is not only the saving of time but also saving money.

The future of online curricula can also include resources that supplement the classroom. Shepley (2009) outlined a plan for librarians and professors to collaborate in what they coined the collaboration evolution, which is defined as “the ways that librarians can build connections across campus that can over time develop into more expansive projects that will involve and impact more members of the campus (and off-campus) community” (p. 90). In a separate article about the role of librarians and coursework, Gorman and Staley (2018) compared online or in-person instruction for library research help, and the students overwhelmingly preferred online
instruction for the same reason many students prefer online courses. These include going at the student’s own pace and reviewing the materials at a later date.

Distance education can help reform society by offering courses in an online format to prisoners, which would help them acclimate and be less likely to re-offend when reentering society (Sanford & Foster, 2006). Watts (2010) found that FTF education in a prison setting can be challenging, especially in a high-security prison. These issues include instructors not being allowed to bring instruction materials with them, instructors facing long lines to be screened by security personnel, and finding an appropriate place to conduct the teaching with supervision. While these issues are unchangeable, the problems prisons face with distance education can be changed. These online issues include student access to the internet, devices, and a designated place to conduct schoolwork. This work can be put toward further use with this specialized population and other groups with technology advances helping education.

**COVID-19 & Online Engagement**

As mentioned in chapter one, COVID-19 has increased the relevancy of online student engagement due to most classes going remote in March 2020 (Bustamante, 2020). Studies are gradually coming out to discuss the impacts of COVID-19 on engagement. Castro and George (2021) found that engagement levels decreased sharply after transitioning from in-person to online classes. However, they surprisingly also found that students wanted more course options with online components since many got used to online learning after a while. These findings would support Hass and Joseph (2018), who found that students would be more likely to take an online class after exposure to distance education prior to the pandemic.

Andrew et al. (2021) set out an objective to “identify ways to better support student engagement in the synchronous virtual environment” (p. 1). They concluded that focusing on
students’ sense of belonging and wellbeing can help them engage in the virtual environment. Professors should take class time to let students talk about how they are doing and respond to the pandemic, creating a safe space for students to engage with their classmates.

Besides the emotional reaction to switching to virtual modalities, students had their technology skills tested, and it became clear who had the advantage during virtual learning: the wealthier students (Bacher-Hicks et al., 2021; Castro & George, 2021; Heidari et al., 2021). Reilly (2020) reported on the technology gap at the beginning of the pandemic and found that “about 15% of U.S. households with school-age children lack high-speed Internet access” (p. 40). Similarly, Bacher-Hicks et al. (2021) found that technology-related searches on Google went up drastically in March 2020; however, they were twice as high in wealthy areas of the U.S. compared to poorer and more rural areas of the country.

Bacher-Hicks et al. (2021) argued that the gap in technology during the pandemic would widen the achievement gap in students. Another important feature of this pandemic is digital literacy since there is an assumption that younger generations know how to use technology effectively. Gonzales (2016) pointed out the importance of having access to technology and knowing how to use it in a term coined *Technology Maintenance*, which refers to having access to technology, knowing how to use it properly, and replacing a broken device quickly. Heidari et al. (2021) studied digital competence during the COVID-19 pandemic and found that knowing how to use technology positively impacted student engagement in online courses. Overall, the pandemic has shown that it is important for students to have access to technology and know how to use it. Hargreaves (2021) argued that this pandemic showed that we should invest in public education to fight the digital divide. More studies are needed to add to best practices of supporting students and increasing engagement in online courses.
Theoretical Framework

This study focused on perceived and demonstrated engagement levels in developmental students in an online classroom. For this research study, I used Astin’s (1999) Theory of Student Involvement, which focuses on student involvement levels in higher education and how that impacts student outcomes, whether positive or negative.

Theory of Student Involvement

Astin (1999) defined student involvement as “the quantity and quality of the physical and psychological energy that students invest in the college experience. Such involvement takes many forms, such as absorption in academic work, participation in extracurricular activities, and interaction with faculty and other institutional personnel” (p. 528). For my research, I was specifically looking at involvement in academic work and the classroom. The Theory of Student Involvement has five basic postulates: (1) involvement requires physical and psychological energy by students, (2) each student’s level of involvement will vary from person to person and even with themselves depending on the task and time of day, (3) involvement can be measured both quantitatively and qualitatively, (4) the amount of student learning is directly related to that student’s involvement, and (5) the success of educational programs depends on the level of student involvement.

Figure 1

Astin’s (1999) Theory of Student Involvement’s Five Pillars
Astin (1999) argued that this new theory was needed because other learning theories were too narrow in scope, including “subject-matter theory, resource theory, and individualized theory” (p. 519). This learning theory is broad and can apply to all students in various higher education activities; I researched engagement in online classrooms and learning environments. Burch et al. (2015) found that the Theory of Student Involvement helped support their hypothesis: “student engagement consists of the separate constructs of emotional engagement, physical engagement, cognitive engagement in class, and cognitive engagement out of class” (p. 225). In addition, the Theory of Student Involvement has been connected to online engagement; Heiberger and Harper (2008) studied the features of Facebook and how they relate to the five postulates of Astin’s (1999) theory. The authors also explained how students are participating in this type of engagement daily, outside the classroom, using social media. The five postulates of the theory are further explained in the following sections.

**Investment of Physical and Psychological Energy.** Students will put their physical, mental, emotional, and physiological energy into many different activities through their college experience. That energy could be physical, meaning going to class and doing assignments, or it

<table>
<thead>
<tr>
<th>Postulate</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Involvement includes both physical and psychological energy invested by students.</td>
</tr>
<tr>
<td>2</td>
<td>Involvement varies and will change based on activity, student, and time of day.</td>
</tr>
<tr>
<td>3</td>
<td>Involvement can be measured in both quantitative and qualitative ways.</td>
</tr>
<tr>
<td>4</td>
<td>Student involvement is directly associated with the success of a program.</td>
</tr>
<tr>
<td>5</td>
<td>Educational policy should strive to increase student involvement.</td>
</tr>
</tbody>
</table>
could be emotional and mental, such as dealing with the stress and anxiety that goes along with being a college student. Astin (1999) also explains that these energy investments can be highly generalized, such as enjoying college as a whole or very specific, such as writing a paper or preparing for an exam. Rayle and Chung (2008) looked at first-year students’ social experience and academic stress. They explained that many aspects of college cause students’ anxiety, including the several assigned tasks and creating a new social circle that will provide the support necessary to excel in the college environment. That study is one example of how students put their energy into the college experience.

Involvement Levels are Continuously Changing. Each college student differs, and no student has energy levels to be involved physically or mentally every moment. The second part of the Theory of Involvement says, “involvement occurs along a continuum” (Astin, 1999, p. 519). This idea means that two different students will have different levels of involvement based on their activity; moreover, the same student will have different levels of engagement depending on the time of day and day of the week. This aspect of the theory directly related to my classroom observations. Some of them occurred at an early morning class; the others took place in a later morning class. The time of day could impact the student engagement levels.

Ayouni et al. (2021) connected this specific postulate to online learning, giving the example of a student’s interaction with a learning management system (LMS). No two students will interact with the LMS for a course in the same way; a student’s involvement with a course’s LMS will vary depending on the time of day and point in the semester.

The Measurement of Involvement. According to Astin (1999), student involvement is measured in both quantitative and qualitative ways: “the extent of a student’s involvement in academic work, for instance, can be measured quantitatively (how many hours the student
spends studying) and qualitatively (whether the student reviews and comprehends reading assignments or simply stares at the textbook and daydreams)” (p. 519). For example, too often, researchers only focus on the number of times a student raises their hand or talks in the classroom (Handelsman et al., 2005; Howard et al., 1996; Karp and Yoels, 1976; Weaver & Qi, 2005) or how many times they post on an online discussion forum in a course (Hew & Cheung, 2008). While both are important quantitative ways to measure student engagement, qualitative involvement is just as significant.

When creating the Online Student Engagement (OSE) scale, Dixson (2015) went beyond quantitative participation and asked for other means of engagement, including asking questions regarding helping other students, finding ways to apply the course to the student’s life, organization, and note-taking techniques. These examples count as student involvement just as much as a student raising their hand to talk in class. Fritschner (2000) defined the meaning of participation between classroom talkers, who saw participation as just that, and non-talkers, who saw participation as active listening and coming to class prepared. All of the above studies defined student involvement in one way or another; however, the definition of involvement and research methods vary depending on the researcher.

**The Connection between Student Learning and Student Involvement & Educational Practice and Student Involvement.** Astin (1999) considered the last two postulates necessary for influencing engagement inside and outside the classroom. The second to last postulate is the connection between student learning and student involvement; the last is educational practice and student involvement. An educational program cannot be successful without student involvement. Engagement in courses leads to higher grades (Handelsman et al., 2005), better understanding (Weaver & Qi, 2005), and builds citizenship and character (Kuh & Umbach, 2004). Educational
programs can vary, meaning a classroom, a degree program, or something outside the classroom. My research aimed to improve student engagement in online courses within a developmental program. Educators can accomplish these last two discussion points with more insight into the best practices.

**Conclusion**

COVID-19 brought the topic of online engagement to center stage as educators scrambled to turn in-person lessons virtual. It is essential to focus on increasing student involvement in online coursework. More students are likely to choose an online course in the future now that they have been exposed to one (Castro & George, 2021; Hass & Joseph, 2018; Meyer, 2014). Dixson (2015) created the OSE scale to measure perceived engagement levels in online courses. With that data, educators can increase participation in the virtual classroom. The Theory of Student Involvement provides a framework that clearly defines engagement and lays out the involvement necessary for student success. Even though this was created prior to virtual education, it has been augmented to apply to virtual communication and engagement as well (Heiberger & Harper, 2008).
CHAPTER III: METHODS

Overview

This research sought to measure students’ perceived and demonstrated engagement levels in a virtual developmental course. In order to accomplish this, the study used a convergent mixed methods design. Creswell and Plano Clark (2017) defined a convergent design as “a mixed methods design in which the researcher collects and analyses two separate databases—quantitative and qualitative—and then merges the two databases for the purpose of comparing or combining the results” (p. 68). This data for this study’s quantitative and qualitative components were collected simultaneously and compared with one another to explore and better understand the overall research topic. The participants were students enrolled in a virtual summer bridge program, and the instruments included a survey (Appendix C), a researcher-generated document (Appendix D), and observations (Appendix E).

This chapter will describe the purpose of mixed methods research, which this study used, and outline the structure of quantitative survey design and qualitative case study. I will then outline the participants, setting, and data collection schedule. Next, I will describe the instruments used in this study: a pre-existing survey, observations, research-generated document/data analysis. I will mention data triangulation and threats to validity and reliability. Finally, I will detail the analysis and coding procedures.

Mixed Methods Research

Mixed methods research is defined as “a methodology that span[s] viewpoints to inferences and that include[s] the combination of qualitative and quantitative research” (Creswell & Plano Clark, 2017, p. 4). As stated throughout the literature review, most studies regarding student participation and engagement have been quantitative. My plan to use mixed methods
adds to and builds on the current literature using quantitative and qualitative research methods. I explored the central phenomena using qualitative methods, including self-assessments and observations. I cannot answer the proposed research questions alone using quantitative or qualitative methods.

**Quantitative Survey Design**

This study used a cross-sectional survey design, meaning the data was collected all at once. Quantitative survey design is “a set of research procedures in which investigators administer a survey to a sample or to the entire population of people to describe the attitudes, opinions, behaviors, or characteristics of the population” (Creswell, 2017, p. 385). The purpose of using a survey for this study was to measure students’ perceived engagement levels using the Online Student Engagement (OSE) scale, developed by Dixson (2015). By using a survey, I was able to view trends in the data.

Other researchers have used the OSE scale in their research. For example, Bolliger and Halupa (2018) used the OSE scale to measure transactional distance in education, meaning how engagement was affected by online courses where students and professors were from different geographical areas. They found that students “managed their time and activities, paid attention to content, put in the effort, and desired to earn good grades” (p. 311) based on the OSE scale responses. Hensley et al. (2021) used the OSE scale to measure student satisfaction in online courses and found student engagement to be high, especially in Generation Z and within Ph.D. programs. Moreover, students who were more engaged with their online coursework were more likely to persist in their enrolled programs. One of the core focuses of my research, and this study was to measure students’ perceived engagement levels, which the OSE scale is proven to do (Dixson, 2015).
Qualitative Case Study

What is a qualitative case study? Depending on which expert someone asks, the answers will be different. Yazan (2015) compared the three primary researchers of qualitative case study: Yin (2002), Merriam (1998), and Stake (1995). According to Yazan (2015), “novice investigators who are planning to conduct qualitative case study can find Merriam’s account noticeably more useful and beneficial in terms of the guidelines for data collection” (p. 144). As a novice researcher, the approaches laid out by Merriam (1998), who defined a qualitative case study as “an intensive, holistic description and analysis of a bounded phenomenon such as program, an institution, person, a process, or a social unit” (p. xiii) was most appropriate. In this approach, researchers need to hone their skills as qualitative researchers and utilize different research instruments, including observation and analyzing documents, which this study used (Yazen, 2015).

Heil (2005) used journal entries as a qualitative research method while studying students’ evaluation of internet sites and found that student frustrations came through more in the entries versus classroom conversations. According to Merriam (1998), researchers can use personal documents as a reliable source of a persons’ beliefs. This study used a researcher-generated document to gauge how students engaged with their course material and peers. Personal documents and writings can be subjective, so the researcher needs to consider the participants’ source and perspective.

“Observation is the process of gathering open-ended, firsthand information by observing people and places at a research site” (Creswell, 2015, p. 214). Observations in research can be instrumental and are an essential part of qualitative research that takes place in the study setting and allows the researcher a firsthand account of the phenomenon being studied (Merriam, 1996).
Howard et al. (1996) used observations to gather data on student participation and found that a few students do most of the talking, non-traditional students are more likely to participate, and participation in larger classes is lower than in smaller classes; this was a mixed methods study. Fritschner (2000) had the same results as Howard et al. (1996) using qualitative research approaches, including observations.

**Participants**

The study participants were enrolled in a five-week summer program during the summer of 2021 at a university located in the suburban Northeast. This University will be referred to as Northeast University (NEU) to protect the anonymity of the participants. The completion of this summer program is typically required for admission at NEU. The administration of the University did make exceptions during the summers of 2020 and 2021 due to the difficulties caused by COVID-19. The summer program, which will be called the Special Admissions Program (SA program), is typically held in person. However, it was held virtually during summers 2020 and 2021 due to the pandemic.

The students completing the SA program are students who show academic promise but fell short of the admission requirements of NEU. The SA program is designed to help these students by giving them the skills and knowledge necessary to succeed in college. The SA program includes developmental coursework, mandatory tutoring, academic success workshops, specialized advising, and peer mentoring. The participants included students from the summer 2021 SA program that were above the age of 18 at the start of the program. All of the participants were first-year college students who graduated high school a few weeks before starting the SA program.
**Population and Sample**

The population of this study was students participating in the SA program at NEU. These students who applied to NEU indicated that they would be interested in completing a summer bridge program for entry to the University and were accepted to complete the SA program. All participants were at least 18 years old, with some being 19 years old. They were all recent high school graduates entering their first year of college. As long as they were 18 years old, the participants had the opportunity to participate in this research, which created the sample for this study.

**Sampling Procedure**

Students had many opportunities to participate in this study, and I used multiple recruitment tools. Students were informed of this study via email with a link to participate, and this was sent to their Institutional email (Appendix B). The email explained the purpose of the study, and 63 out of 172 students decided to participate by completing a consent form and brief survey. Some professors agreed to assist in the recruitment by reading a script and sending the link out during class; these same professors also allowed me to introduce the study to students before starting classroom observations. The recruitment of participants took place during weeks three, four, and five of the SA program.

**Participants in QUAN Data Collection**

This study was a convergent mixed methods study; therefore, the participants were the same, and the data were collected simultaneously. To participate in the quantitative portion of this study, students completed a survey via Qualtrics, the survey tool used by NEU. The 19-question Likert scale, the Online Student Engagement (OSE) scale, measured students’ perceived
engagement levels (Dixson, 2015). This survey only took participants a few minutes to complete. I stored this data in Qualtrics.

**Participants in QUAL Data Collection**

All participants who completed the OSE also consented to be observed in the classroom and have their assignments downloaded for analysis, including the researcher-generated document. The participants did not need to do anything extra to participate in the qualitative portion of this study since the assignments and class attendance were part of the course I studied.

**Description of the Setting**

The SA program is five weeks and typically requires students to reside on campus for the program; however, it was virtual during summer 2021 due to COVID-19. The university made this decision when they decided that all classes would remain remote until the Fall 2021 semester, when they returned to in-person instruction. Students had access to their professors’ and tutors’ contact information. They also used Zoom, an online video software, for synchronous classes, tutoring sessions, workshops, and meetings. Finally, all courses were designed in the Institution’s Learning Management System (LMS) as an online course. Professors could hold content, conduct quizzes and exams, collect assignments, and utilize the LMS page’s discussion boards.

**Summer Courses**

All students in the SA program took two courses during the five-week program, a reading and study skills course and a math or writing course, depending on placement scores. Since all students were enrolled in the reading and study skills course, that was the setting of this study. This study called this course reading and study skills 100 (RSS 100). RSS 100 focused on critical
thinking required for college success and allowed students to practice the learned skills through class participation and homework assignments.

**Student Schedule**

Students had a rigorous schedule during the SA program. They were required to attend two classes each morning from 8:30 am-11:45 am. Each student also had one hour of tutoring per week for their math or writing course. Some students were required to attend tutoring for the RSS 100 course if the professor requested it. Many students took advantage of additional tutoring available as well. The faculty and staff also ran mandatory workshops and meetings during the five-week program.

**Data Collection Schedule**

The SA program ran for five weeks during the summer session of NEU. This study required participants to reflect on their engagement in the RSS 100 course, so I decided when to distribute the instruments during the following times.

**Week One.** During week one, all eleven sections started their courses in the SA Program at NEU, including the RSS 100 course. The only data collected at this time were students’ assignments or discussion posts that were not affiliated with the researcher-generated document.

**Week Two.** The first self-assessment was assigned to the students. The professors uploaded this assignment to the LMS page, and the professors graded it. I did not download participants’ assignments until after the summer session ended.

**Week Three.** The OSE scale was distributed to students via email at the start of week three. The email contained a link that took the participant to a consent form and Qualtrics survey. The survey included a 19-question Likert scale that took students a few minutes to complete.
**Week Four.** During week four, the professors assigned the second self-assessment to students. In addition, I completed seven out of eight classroom observations during week four of the program.

**Week Five.** This week was the last opportunity for students in the SA program to complete the OSE, which closed after the last day of the program. The last observation took place on the first day of week five at the professor’s request. After the program concluded, I worked with the University staff that handled LMS access to get on the professor’s LMS page to download student assignments. Professor permission was required, which they gave throughout August and September 2021. All professors permitted LMS access so that the researcher could access all 11 sections.

**Instrumentation**

This study used both qualitative and quantitative methods as mixed methods research. Specifically, I used a pre-existing survey instrument, a researcher-generated document, and classroom observations to answer the research questions:

1. How engaged are first-year developmental students in an online summer bridge program course?
   a. What are students’ perceived levels of engagement?
   b. In what ways are students demonstrating engagement?

The following sections will detail each instrument in more depth.

**Survey**

All students in the SA program must complete the RSS 100 course as part of the summer bridge program. The SA program faculty and staff work with the tutoring center, program coordinators, and classroom faculty to ensure students’ success. Dixson (2015) developed the
Online Student Engagement (OSE) scale to assist in online course design, provide feedback about perceived student engagement levels, and be used as evidence for professors seeking to show they have engaged their students in an online course. Dixson (2015) argued that engagement is an essential factor in student learning and connects that to the theoretical framework of social constructivism: “students may perform a set of actions by themselves but will perform better when allowed to work collaboratively with others” (p. 144). This reason justifies creating a tool to ensure moderate engagement levels in online courses.

Before the development of the OSE, there was no instrument to measure student engagement in online courses. There were separate surveys that could measure this, including: “the Classroom Survey of Student Engagement (Smallwood, 2006): the Student Course Engagement Questionnaire (Handelsman, Briggs, Sullivan, and Towler, 2005), and the Rubric for Assessing Interactive Qualities in Distance Courses (Roblyer, Wiencke, 2004)” (as cited in Dixson, 2010, p. 3); however, there was no tool combining the data gathered from all three. After reviewing those instruments and consulting with online educators, the OSE was developed.

Initial tests supported reliability: Reliability of the pilot with 31 online students was strong (0.95) and the scale correlated strongly with two global items on engagement with the course (r = 0.73; p < 0.01) and two global items of social presence (getting to know other students and your instructor) (r = 0.38; p < 0.05), thus supporting face validity (Dixson, 2010, p. 4).

The instrument was tested again, and the following hypothesis was supported: “The OSE will significantly and positively correlate with application learning student behaviors in an online course” (Dixson, 2015, p. 150). This instrument is measures student engagement in online courses. For those reasons, I used the 19-items on the scale as my quantitative survey instrument.
for this study. Permission was given by the creator on November 9, 2020, via email (Appendix F).

This survey measured engagement by asking students to perceive their own participation with their peers, coursework, and professors. The OSE scale takes different types of participation into account. For example, it asks students how likely they are to participate in online chats, small-group discussions, and engage in conversations. However, it also asks them to perceive their mental participation, such as staying on top of class readings, studying, and staying organized. The OSE scale gives a complete picture of a students’ perceived engagement levels, so I used it as the primary instrument in the quantitative portion of this research. The OSE scale is a Likert scale with 19 questions, where students rate themselves between “not at all characteristic of me” to “very characteristic of me” (there are five options) as seen in Table 1.1.

**Table 1.1**

OSE Scale (from Dixson, 2015, p. 157)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Making sure to study on a regular basis</td>
</tr>
<tr>
<td>2</td>
<td>Putting forth effort</td>
</tr>
<tr>
<td>3</td>
<td>Staying up on the readings</td>
</tr>
<tr>
<td>4</td>
<td>Looking over class notes between getting online to make sure I understand the material</td>
</tr>
<tr>
<td>5</td>
<td>Being organized</td>
</tr>
<tr>
<td>6</td>
<td>Taking good notes over readings, PowerPoints, or video lectures</td>
</tr>
<tr>
<td>7</td>
<td>Listening/reading carefully</td>
</tr>
<tr>
<td>8</td>
<td>Finding ways to make the course material relevant to my life</td>
</tr>
<tr>
<td>9</td>
<td>Applying course material to my life</td>
</tr>
<tr>
<td>10</td>
<td>Finding ways to make the course interesting to me</td>
</tr>
</tbody>
</table>
11. Really desiring to learn the material
12. Having fun in online chats, discussions or via email with the instructor or other students
13. Participating actively in small-group discussion forums
14. Helping fellow students
15. Getting a good grade
16. Doing well on the tests/quizzes
17. Engaging in conversations online (chat, discussions, email)
18. Posting in the discussion forum regularly
19. Getting to know other students in the class

Observations

I worked with the RSS 100 professors and observed eight of the eleven sections during the fourth and fifth weeks of the SA program. Using structured field notes, I quietly observed, as a non-participant, in the virtual classroom to see how students demonstrate engagement, including (but not limited to) how did students participate, how often did they participate, how did they engage with each other, and how did they use the virtual classroom features (e.g., chatbox). The OSE survey focused on perceived engagement levels; this instrument allowed me to see demonstrated engagement levels.

I created a structured field notes document to look for specific observations and space to reflect on those observations. I had five different observation categories and took a detailed description and reflective notes on each category:

- Participation Levels
- Engagement with Professor
● Engagement in Peers
● Engagement with Course Material
● Modes of Participation (e.g. chatbox, talking out loud)

There was also a section for “other” and an area for research notes and implications at the bottom of the document. During observations, I took continuous notes, recorded audio, went back to complete the above categories, and recorded memos after completing the field notes.

Research Generated Document/Document Analysis

According to Merriam (1998), critics of observations see them as subjective and human perception as unreliable; however, observers can be trained to take meticulous field notes, learn to separate details, and analyze the data in a way to validate the observations. I developed a qualitative tool to gather more in-depth information regarding students’ engagement levels with their course material and peers in the RSS 100 course. I collaborated with the coordinator of the RSS 100 courses, and the professors incorporated the instrument into one of the existing assignments for the class. This instrument complements the quantitative tool by asking students to go more in-depth and describe how they engage in the RSS 100 course. With the consent of participants, the participants’ class assignments, including the research-generated documents, were downloaded from the LMS for analysis.

As someone who always could write out what I was trying to say much better than verbalizing it, I was interested in using journaling as a technique to learn more about student engagement levels in their online course. To do this, the participants completed two separate journal entries, which were incorporated into two class assignments called: class participation self-assessments. The self-assessment was a classroom assignment for the students’ RSS 100 course. I worked in conjunction with the RSS 100 program coordinator for the SA Program to
ensure that the instrument worked for both the study and the course. However, the end result was both journal entries being combined to one document.

The goal of the entry was to learn about students’ engagement levels with the course material and their peers. The first set of prompts, given in week two of the five-week summer program, focused on students’ engagement with the course material. I created the following prompts:

- “I prepare for this class by…”
- “The way I organize my notes involves…”
- “This class material will help prepare me for future college classes by…”

Each prompt aimed to see how students engage in class, including preparing for class, note-taking, and the course material.

The second set of questions focused on how students engaged with their peers in the class. These were combined into the same assignment as the first prompts. With assistance from the RSS 100 coordinator, the following prompts were included:

- “Describe two ways, using specific examples, that you give to the class community.”
- “Describe two ways, using specific examples, that you have learned from the class community.”

The purpose of these prompts was to see how students interacted with their peers in the RSS 100 course.

**Data Collection Procedures**

**Quantitative Data Collection**

The survey went out to students at the beginning of week three of the SA program via email. Students had the opportunity to participate in the study by completing the consent form.
and survey on Qualtrics. The consent form was embedded, and participants had to complete it to move on to the survey. Demographics were optional, and out of the 63 participants, 31-32 participants answered these optional questions. From these results, the gender was almost even with slightly more males, and the ethnicities varied, with Caucasian being the most represented. These numbers are presented in Tables 2.1 and 2.2. I collected all survey data between July 18, 2021-August 5, 2021.

**Table 2.1**

Optional Demographics: Gender

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>53.13%</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
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<td>15</td>
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<tr>
<td>2</td>
<td>Non-binary/third gender</td>
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<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Gender identity not listed</td>
<td>0.00%</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Prefer not to say</td>
<td>0.00%</td>
<td>0</td>
</tr>
</tbody>
</table>

**Table 2.2**

Demographics: Ethnicity

<table>
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<tr>
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<th>African American</th>
<th>19.35%</th>
<th>6</th>
</tr>
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<tbody>
<tr>
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<td>Asian</td>
<td>3.23%</td>
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</tr>
<tr>
<td>2</td>
<td>Caucasian</td>
<td>61.29%</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>Latino or Hispanic</td>
<td>0.00%</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Native American</td>
<td>3.23%</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Asian or Pacific Islander</td>
<td>0.00%</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>6.45%</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>Prefer Not to Say</td>
<td>6.45%</td>
<td>2</td>
</tr>
</tbody>
</table>
**Qualitative Data Collection**

The participants in the survey data collection gave consent to observe them in the classroom and download their course assignments for analysis from the LMS. In addition, observations included non-personal data for all students in the SA Program, including how many students missed class, were on-time/late, and used the Zoom chat feature. The qualitative tools included in this research were observations, research-generated documents, and LMS analysis.

**Observations.** Based on scheduling, I went into nine out of eleven virtual sections of RSS 100 during week four (and one during the first day of week five) based on scheduling and which professors permitted their class to be observed and recorded. I took descriptive notes using a pre-designed structured field notes template, recorded audio, and created memos for each observation for future analysis. Each professor gave me “hosting” permission. That way, I could switch between breakout rooms if the professor used that Zoom feature during class.

**Research-generated Documents/ Document Analysis.** All students in the SA program completed the research-generated documents as part of their RSS 100 coursework. The participants of this study permitted me to download these assignments and all other assignments for future analysis. In addition, I had permission to review their discussion posts on the LMS page. Due to faculty union rules, it was required that the professor permit me to be added to their RSS 100 courses. All professors gave permission, so I downloaded the assignments of all 63 participants for qualitative analysis.

**Data Triangulation**

Convergent mixed method designs collect and analyze data simultaneously, which this study did:
The basic idea is to compare the two results with the intent of obtaining a more complete understanding of a problem, to validate one set of findings with the other, or to determine if participants respond in a similar way if they check quantitative predetermined scales and if they are asked open-ended qualitative questions (Creswell & Plano Clark, 2017, p. 65).

I triangulated the data of this study through the use of both quantitative and qualitative research methods. The purpose of the quantitative survey instrument was to measure students’ perceived engagement levels; the purpose of the qualitative research-generated document and observations was to measure students’ demonstrated engagement levels.

**The Unit of Study**

This study took place at a mid-Atlantic medium-sized public institution. The institution has almost 15,000 undergraduate students enrolled; the majority of students (73.6%) are white (Data USA, 2021). The purpose of the SA program is to give students who show academic potential, but do not meet University admission requirements, the chance to complete a summer bridge program that would strengthen their academic skills needed for college. The SA program typically takes place on-campus, where students are required to live on-campus during the five-week program. The SA program was virtual during the summer 2021 term due to the ongoing COVID-19 pandemic. The University decided to go virtual in March 2020 and stayed primarily virtual until the start of the Fall 2021 semester. All students were enrolled in the Institution’s LMS pages, including one for each course and one for the SA program as a whole. The courses, tutoring sessions, workshops, and advising sessions took place via Zoom.

**Informed Consent and Protection of Human Subjects**

All participants were above the age of 18 at the start of the SA program. If a student was under 18, they were excluded from participating. All participants were required to sign a consent
form before participating in this study, which outlined their consent to the survey, classroom observations, and access to their course assignments. I stored participant data on the Institution’s OneDrive. The professors did not know which students did or did not participate. The data analysis did not start until after the program ended to protect their privacy.

**Threats to Validity and Reliability**

**Internal Validity**

Quantitative Design. Before the development of the OSE scale, there was no instrument to measure student engagement in online courses. There were separate surveys that could measure this; however, there was no tool combining the data gathered from all three. After reviewing those instruments and consulting with online educators, the OSE scale was developed. Initial tests supported reliability, and when the instrument was tested again, the following hypothesis was supported: “The OSE will significantly and positively correlate with application learning student behaviors in an online course” (Dixson, 2015, p. 150). For that reason, I used the 19-items on the scale as the quantitative survey instrument for this study.

Qualitative Design. This research utilized observations and a research-generated document. Internal validity in observational research can be tricky because the researcher needs to determine if the observed behaviors are valid or something unrelated to what is being observed (Carlson & Morrison, 2009). I observed nine out of eleven sections during the same week (besides one that happened the first day of week five); therefore, the courses covered similar content. This technique assisted in generalizing this research to this population as a whole and made observations more valid. By triangulating the data with a research-generated document and analysis of the LMS pages, I used two different forms of demonstrated engagement levels
instead of relying on observations or the research-generated document alone, as Merriam (1998) suggested using multiple instruments in case study research.

External Validity

According to Carlson & Morrison (2009), “external validity is the ability to generalize study results to a more universal population” (p. 81). The population that this study focused on was developmental students; other educators would be able to use the findings of this study to improve their virtual offerings in developmental courses. Moreover, the results of this study will add to the ongoing literature of perceived engagement levels from researchers that used the OSE scale.

Researcher’s Bias and Observer’s Paradox

My academic position is heavily involved in this program, and I work directly with the student’s that are part of the SA program even though I do not work in that office. For that reason, I did not download the research-generated document, other assignments or review the discussion posts until after the semester concluded. I did not have access to the RSS 100 course on the University’s LMS until the summer program concluded. The surveys were administered, and observations were completed during the program, but data analysis did not begin for an additional three months. This allowed me to separate my position in the program and responsibility to its students and my position as a researcher.

Analysis and Coding Procedures

This study utilized a convergent mixed methods approach; therefore, the data was collected simultaneously, analyzed separately, and combined to answer the research questions (Creswell & Plano Clark, 2017). I analyzed the quantitative data first and used the themes from the OSE scale to analyze the qualitative data, which are listed below.
**Quantitative Analysis**

The purpose of the quantitative tool, the OSE scale, was to measure perceived student engagement and aid to course design:

Since it measures perceived student engagement, it is vulnerable to all of the factors that affect the ability of student evaluations to be used as valid or reliable measures of teaching effectiveness: level of the course, type of content, preparedness of students, and so on. However, it provides a measure of the environment created by the design choices and responsiveness of the instructor and, thus, is an indirect measure of teaching effectiveness (Dixson, 2015, p. 152).

The qualitative tools were designed based on the OSE scale to see how students were demonstrating engagement. The OSE scale has 19 questions, which I separated into four themes, which contained groupings of statements from the Likert scale: (1) grade-based engagement, (2) engagement with the course material and organizational skills, (3) desire to learn the course material, and (4) engagement with peers in the online course.

“Analysis of variance (ANOVA) is a statistical technique that is used to check if the means of two or more groups are significantly different from each other” (Singh, 2018, n.p.). Initially, I planned to compare the differences between the four groups; however, after running an ANOVA test, there were no significant differences between the four themes. My next plan, which did have interesting results, was to compare the differences within the four themes and across all the 19 survey statements. To do this, I utilized paired t-tests: “paired t-tests are used when the same item or group is tested twice, which is known as a repeated measures t-test” (Gleichmann, 2020, n.p.). This study had the same group of participants being compared.
Qualitative Analysis

Students in the RSS 100 course took participation self-assessments as part of their grade. The first qualitative instrument, the journal entries, were incorporated into these assignments. Students answered the following prompts as part of the first self-assessment assignment:

- “I prepare for this class by…”
- “The way I organize my notes is…”
- “The material I have learned so far will help me in my future classes by…”
- “Describe two ways, using specific examples, that you give to the class community.”
- “Describe two ways, using specific examples, that you have learned from the class community.”

Not all participants turned in this first assignment even though all 11 sections of the course did assign it; 56 out of 63 participants turned in this assignment. Of those 56, six did not complete that portion of the full assignment. Finally, out of the 50 that turned in the assignment and answered the prompts, eight participants left at least one prompt blank.

The second self-assessment was a repeat assignment to see how students answered the questions towards the end of the program compared to mid-way through. However, not all the professors assigned the self-assessment again. Out of the 63 participants, only 21 participants were assigned and 18 completed the second self-assessment. Therefore, I decided to only use the first self-assessment since there is not enough data in the second group to make fair comparisons.

Eight out of nine professors permitted me to observe their classroom during the fourth week of instruction. Due to permission and scheduling, I observed nine out of eleven sections, observing a total of 53 participants; however, one student was absent, so I observed 52 out of 63 participants in the virtual class. Each course was around 1.5 hours. I observed as a non-
participant, recorded each session, and kept detailed notes and memos for analysis. In addition, I observed the participants’ discussion posts and assignment submissions on the institution’s learning management system to see how students are demonstrating their engagement.

I employed a conceptual analysis to analyze the qualitative data. Conceptual analysis “focuses on the number of times a concept occurs in a set of data and is generally focused on explicit data” (Crosley, 2021, n.p.). In addition, I used deductive, or predetermined codes, based on the four themes that emerged from the quantitative data analysis.

Summary

This study aimed to see how developmental students engaged in an online course during a five-week summer bridge program. The COVID-19 pandemic gave me the opportunity to study a virtual course that would typically be held in person. There is ongoing literature regarding developmental education, distance education, and student participation; however, no research combines all three. This research is grounded in Astin’s (1999) Theory of Student Involvement, which emphasizes the importance of engagement in the learning process. The data will be presented, and generalizations reached in chapter four. I will list the conclusions from this data in chapter five.
CHAPTER IV: RESULTS

Introduction

This chapter will outline the results of the study, which examined the level of engagement in developmental students in an online course. This study had one research question and two sub-questions: (1) How engaged are first-year developmental students in an online summer-bridge program course? (1a) What are students’ perceived levels of engagement? (1b) In what ways are students demonstrating engagement? The data is divided into four themes: (1) grade-based engagement, (2) engagement with the course material and organizational skills, (3) desire to learn the course material, and (4) engagement with peers in the online course. Each theme will include data from the qualitative and quantitative data collected.

As explained in chapter three, I employed a conceptual analysis to analyze the qualitative data. In addition, I used deductive, or predetermined, codes based on the four themes that emerged from the quantitative data analysis. I coded the data and will present the generalizations reached. I will list the conclusions and recommendations from this data in chapter five.

This chapter will lay out four themes I derived from the OSE scale statements. I will then give the quantitative and qualitative results for each theme while also providing tables and charts to provide more context. Next, I will list the results of the cross-theme t-tests and discuss the importance of these findings. Finally, I will conclude this chapter with a summary of these results before moving on to the final discussion.

Theme #1: Grade-based Engagement

Inferential Quantitative Results from Theme #1: Grade-based Engagement

Out of the six paired t-tests completed, there was a statistical difference between five of the groupings: (1) making sure to study on a regular basis and putting forth effort, (2) making
sure to study on a regular basis and getting a good grade, (3) making sure to study on a regular basis and doing well on the tests/quizzes, (4) putting forth effort and doing well on the tests/quizzes, and (5) getting a good grade and doing well on the tests/quizzes.

There was a significant difference in the scores for “making sure to study on a regular basis” and “putting forth effort.” The mean of the first statement, “making sure to study on a regular basis” was 3.24, while the standard deviation was 0.78. The mean of the second statement “putting forth effort” was 4.17, and the standard deviation was 0.68. This yielded a $p$-value of less than 0.0001 as shown in Table 3.1.

Table 3.1

*Paired t-test results for “making sure to study on a regular basis” and “putting forth effort”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>10.7316</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>.68</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was also a significant difference between “making sure to study on a regular basis” (M=3.24, SD=0.78) and “getting a good grade.” For the latter statement, “getting a good grade,” the mean was 4.03, while the standard deviation was 0.76, which yielded a $p$-value of less than 0.0001 as shown in Table 3.2.

Table 3.2

*Paired t-test results for “making sure to study on a regular basis” and “getting a good grade”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>$p$</th>
</tr>
</thead>
</table>


Finally, “making sure to study on a regular basis” (M=3.24, SD=0.78) had a significant difference in scores from “doing well on the tests/quizzes,” where the mean was 3.65, and the standard deviation was 0.79, which also yielded a \( p \)-value of less than 0.0001 as can be seen in Table 3.3.

**Table 3.3**

*Paired t-test results for “making sure to study on a regular basis” and “doing well on the tests/quizzes”*

<table>
<thead>
<tr>
<th>Group</th>
<th>( N )</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>7.2882</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Getting a good grade</td>
<td>63</td>
<td>4.03</td>
<td>.76</td>
<td>.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These results suggest that students perceived their daily studying as low, while rating their effort levels as high. Effort level included wanting a good grade and doing well on tests and quizzes. There were other significant differences between other themes.

There was a significant difference in the scores for “putting forth effort” (M=4.17, SD=0.68) and “doing well on the tests/quizzes,” (M=3.65, SD=0.79) yielding a \( p \)-value of less than 0.0001 as shown in Table 3.4. These results suggest students perceive their effort levels as
high; however, students perceived doing well on exams lower, which would be part of putting in effort.

**Table 3.4**

*Paired t-test results for “putting forth effort” and “doing well on the tests/ quizzes”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>.68</td>
<td>.09</td>
<td>4.2249</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Doing well on the tests/ quizzes</td>
<td>63</td>
<td>3.65</td>
<td>.79</td>
<td>.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The final grouping with a statistical difference within the grade-based engagement theme was “getting a good grade” (M=4.03, SD=0.76) and “doing well on the tests/ quizzes” (M=3.65, SD=0.79), where the *p*-value equals 0.0002 as can be seen in Table 3.5. These results are very similar to the previous *t*-test results, that students want a good grade; however, they are not doing well on the main things needed to do that, such as doing well on tests and quizzes.

**Table 3.5**

*Paired t-test results for “getting a good grade” and “doing well on the tests/ quizzes”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting a Good Grade</td>
<td>63</td>
<td>4.03</td>
<td>.76</td>
<td>.1</td>
<td>4.0327</td>
<td>0.0002</td>
</tr>
<tr>
<td>Doing well on the tests/ quizzes</td>
<td>63</td>
<td>3.65</td>
<td>.79</td>
<td>.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Descriptive Quantitative Results for Theme #1: Grade-based Engagement

When it came to theme #1 (grade-based engagement), “putting forth effort” had the highest average out of five (4.17), “getting a good grade” was ranked second (4.03), “doing well on test/quizzes” was ranked third (3.65) and ranked last and much lower was “making sure to study on a regular basis” (3.24). This correlates with the statistical difference between the statements. For example, students perceived their engagement as high when it came to putting in effort but lower when it came to doing one of the core parts of putting in effort: studying on a daily basis. As the graph below illustrates, students want to get good grades in the online course but may not do some of the things required to earn that good grade i.e., studying and preparing for exams.

Figure 2

Engagement with Grades Line Graph
Qualitative Results from Theme #1: Grade-based Engagement

Participants had different ideas of what to do to prepare for class and how to put forth effort. Through the journal entries and observations, I was able to see how students demonstrate their engagement within the first theme: grade-based engagement. In addition, I reviewed their assignment history to see which participants had turned in all their assignments and which ones had missing assignments.

Journal Entries. Around 40 excerpts from the journal entries went toward this first category, centered on grades. When asked how students prepare for class, the majority of students described being physically ready for the virtual class to begin. These statements ranged from waking up and logging onto class on time to finishing assignments ahead of time and checking email before class. In Table 4.1, there are examples of students who specifically talked about having materials ready for class.

Table 4.1

Direct quotes from student journals from participants describing having materials ready

<table>
<thead>
<tr>
<th>Direct quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>I prepare for this class by making sure I have everything ready for class and waking up on time before.</td>
</tr>
<tr>
<td>I prepare for this class by getting a pen and paper and making sure my computer is fully charged and [the] camera is on.</td>
</tr>
<tr>
<td>I prepare for this class by having my notes from previous days with me.</td>
</tr>
<tr>
<td>I prepare for this class by being on time and bringing my books.</td>
</tr>
</tbody>
</table>

Some students went beyond having physical materials, such as books and laptops ready, and they also included studying and having work complete for class. Examples of this are shown below in Table 4.2.
Table 4.2

*Direct quotes from student journals from participants that went beyond having materials ready and include finishing required work for class*

I prepare for this class by being on time with all my necessary materials ready and work completed.

I prepare for this class by coming to class ready with the things I need. I also study when I need to.

I prepare for this class by finishing assignments that are due to the best of my ability and having pen, paper and textbooks with me everyday.

I prepare for this class by having materials and notes; reading each day and doing the homework.

I prepare for this class by always making sure I have materials needed and my work completed, I [then] look at the overview of what to expect for the next class and make sure I have everything submitted in the what’s due box.

Not all participants mentioned studying, finishing work, and having materials ready, although the majority did. Below, in Table 4.3, are two examples of students who did not mention their materials or studying in their responses.

Table 4.3

*Direct quotes from student journals from participants that did not mention the class at all when mentioning how they prepare*

I prepare for this class by [waking] up 30 minutes early to have breakfast and get my mind straight and set my stuff up in a quiet well lit room.

I prepare for this class by waking up, eating a good breakfast.
All of these excerpts show how students put effort into the class and work toward getting a good grade since each of these classes had multiple assignments due. On average, there were 20 assignments, ranging in difficulty, due throughout the five-week program.

**Assignment Review.** With faculty permission, I was able to view all student assignments for the course on the Institution’s LMS. I then reviewed the assignment submissions of all participants; I specifically reviewed how many participants turned in all their assignments. The number of assignments that were due in each class ranged from 15 to 29 during the five-week program, and the average was 20.9. Out of all 63 participants, only 9 had submitted 100% of their assignments; the average number of assignments turned in was 80.2%. Ten of the participants had 30% or more of their assignments missing; one participant had only turned in 5% of the required work. The journal entries were part of the assignments in each section, and 89% of students had turned in that assignment; however, some students were missing sections.

**Observations.** I noted key aspects of the class for this section, including camera use, use of the chat feature on Zoom, and attendance. These would all be examples of students demonstrating the effort necessary for engagement in the course. In Table 5 below, I use high, moderate, and low to rate camera use, chat, and attendance. High camera use refers to most students using their cameras. High chat use refers to classes using the chat feature regularly for any function (e.g., to chat, logistics, etc.). High attendance includes all students present in class or one student missing. Moderate camera use refers to half or close to half of students using their cameras. Moderate chat use refers to the chat feature being used but not frequently (e.g., professor puts discussion questions there for students to remember but is not used as a form of communication). Moderate attendance includes classes with two-four students absent. Low camera use refers to no students or almost no students using their cameras. Low chat use refers to
the chat not being used. Low attendance includes five or more student absences. Table 5 below shows the rating of each observation.

**Table 5**

*Ratings of camera use, chat use, and attendance amongst observed classes*

<table>
<thead>
<tr>
<th>Class Observed</th>
<th>Camera Use</th>
<th>Chat Use</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>#2</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>#3</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>#4</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>#5</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>#6</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>#7</td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>#8</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>#9</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Table 5 suggests that a course was more likely to have high participation across the board if cameras were on, the professor encouraged the use of the chat, and good attendance. If a professor did not encourage camera use, the general participation was rated lower for that course, as will be explained later. Overall, the attendance was high for all sections since attendance is mandatory for the program, which is why the one low and moderate attendance was surprising. Finally, the chat feature in courses was a great example of participation, allowing students to engage without speaking out loud or talking over another student.
Theme #2: Engagement with Course Material & Organizational Skills

Inferential Quantitative Results from Theme #2: Engagement with Course Material & Organizational Skills

For the second grouping, I combined the statements on the OSE scale that had to do with organizational skills and engagement with the course material. This grouping created theme #2: engagement with course material and organizational skills. The five statements that I included in this group are (1) staying up on the readings, (2) looking over class notes between getting online to make sure I understand the material, (3) being organized, (4) taking good notes over readings, PowerPoints, or video lectures, and (5) listening/reading carefully.

I completed a total of ten paired $t$-tests between the five statements. Three out of the ten statements were considered to be statistically significant: (1) staying up on the readings and listening/reading carefully, (2) looking over class notes between getting online to make sure I understand the material and taking good notes over readings, PowerPoints, or video lectures, and (3) looking over class notes between getting online to make sure I understand the material and listening/reading carefully.

There was a significant difference in the scores for “staying up on the reading” and “listening/reading carefully.” The mean of the first statement, “staying up on the reading,” was 3.65, while the standard deviation was 0.81. The mean of the second statement, “listening/reading carefully,” was 3.87, and the standard deviation was 0.79. The $p$-value equaled 0.0296, as shown in Table 6.1.

Table 6.1

Paired $t$-test results for “staying up on the readings” and “listening/reading carefully”
There was also a significant difference in the scores for “looking over class notes between getting online to make sure I understand the material” and “taking good notes over readings, PowerPoints, or video lectures.” The mean for the first statement was 3.49, while the standard deviation was 0.95. The mean for “taking good notes over readings, PowerPoints, or video lectures” was 3.71 and the standard deviation was 1.10. This yielded a $p$-value of 0.0038.

This can be shown in Table 6.2.

**Table 6.2**

*Paired t-test results for “looking over class notes between getting online to make sure I understand the material” and “taking good notes over readings, PowerPoints, or video lectures”*

<table>
<thead>
<tr>
<th>Group</th>
<th>$N$</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staying up on the readings</td>
<td>63</td>
<td>3.65</td>
<td>.81</td>
<td>.1</td>
<td>2.2271</td>
<td>0.0296</td>
</tr>
<tr>
<td>Listening/readin carefully</td>
<td>63</td>
<td>3.87</td>
<td>.79</td>
<td>.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looking over class notes between getting online to make sure I understand the material</td>
<td>63</td>
<td>3.49</td>
<td>.95</td>
<td>.12</td>
<td>3.0069</td>
<td>0.0038</td>
</tr>
<tr>
<td>Taking good notes over readings, PowerPoints, or video lectures</td>
<td>63</td>
<td>3.83</td>
<td>.93</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In addition, “looking over class notes between getting online to make sure I understand the material” (M=3.49, SD=0.95) was statistically significant from “listening/reading carefully” (M=3.87, SD=0.79), yielding a p-value of 0.0017 as shown in Table 6.3.

**Table 6.3**

*Paired t-test results for “looking over class notes between getting online to make sure I understand the material” and “listening/reading carefully”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Looking over class notes between getting online to make sure I understand the material</td>
<td>63</td>
<td>3.49</td>
<td>.95</td>
<td>.12</td>
<td>3.2748</td>
<td>0.0017</td>
</tr>
<tr>
<td>Listening/reading carefully</td>
<td>63</td>
<td>3.87</td>
<td>.79</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results from this grouping suggests that students perceive themselves as good note takers and they listen in class, but they do not prioritize looking over those notes. Also, staying up on the readings is ranked less important than taking good notes.

*Descriptive Quantitative Results for Theme #2: Engagement with Course Material and Organizational Skills.*

Each of the five statements’ averages ranked close together with the following order: (1) “listening/reading carefully” (3.87), (2) “taking good notes over readings, PowerPoints, or video lectures (3.82), (3) “being organized” (3.71), (4) “staying up on the readings” (3.65), and ranked the lowest in this category was (5) “Looking over class notes between getting online to make sure I understand the material” (3.49). These rankings suggest that students rank activities
needed for in-class higher than out-of-class activities. These results suggest students’ engagement levels are perceived higher in-class versus out-of-class. As shown in the graph below, students’ answers were similar in this category on average.

**Figure 3**

*Engagement with Course Material & Organizational Skills Line Graph*

---

**Qualitative Results for Theme #2: Engagement with Course Material and Organizational Skills**

All students read the same book through the duration of the course. In addition, the course content and many assignments were similar in each section. Journal entries illustrated how students organized their notes and observations of class lectures and discussions exemplified how students were engaging with the course material.

**Journal Entries.** The journal entry that assessed how students organized their course material asked students to complete the sentence: “The way I organize my notes is…” Some students were more thorough than others. In addition, multiple students mentioned studying and
reviewing notes from the preparing for class prompt. Not all students were detailed in their note-taking techniques, as illustrated in Table 7.1.

**Table 7.1**

*Direct quotes from student journals from participants describing their organizational techniques with little detail*

<table>
<thead>
<tr>
<th>The way I organize my notes is bullet points.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The way I organize my notes is I label them.</td>
</tr>
<tr>
<td>The way I organize my notes is color.</td>
</tr>
<tr>
<td>The way I organize my notes is Word docs.</td>
</tr>
<tr>
<td>The way I organize my notes is by day and class.</td>
</tr>
</tbody>
</table>

Some students were very detailed in their description of organizational techniques as shown in Table 7.2.

**Table 7.2**

*Direct quotes from student journals from participants describing their organizational techniques with great detail*

<table>
<thead>
<tr>
<th>The way I organize my notes is I have a notebook where I take all of my class notes down. When I need paper notes, I have a folder in my notebook where I put all of those. For online notes they are organized in my English Google Doc folder.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The way I organize my notes is [to] keep separate notebooks for each class allowing me to take notes in my personal way but still allowing everything to stay separate and in order.</td>
</tr>
<tr>
<td>The way I organize my notes is I have all my notes in a notebook, I write the date and if we're working on a chapter and then I write the main ideas and how I would describe them in my own words.</td>
</tr>
<tr>
<td>The way I organize my notes is I organize my notes by day and by color coordinating my work. The date is at the top of the page and as soon as the topic is switched, I change my pen color.</td>
</tr>
</tbody>
</table>
The way I organize my notes is having them in flashcards with answers in my own words and [a] notebook with important points from lectures or what I see on slideshows.

It was not only the organizational prompt that had students talking about their study and reviewing skills. Students mentioned their notes and reviewing, which falls into this theme in addition to organizational skills. Examples of this can be found in Table 7.3 below.

Table 7.3

Direct quotes from student journals from participants describing course material review

| I prepare for this class by [organizing] all of my material. I make sure that I understand what I am learning. If not, I try to review so I stay on track in class. |
| I prepare for this class by reading over the notes. |
| I prepare for this class by reading my notes prior to that day, [completing] my homework, and [reading] my assignments |
| I prepare for this class by reviewing and studying my notes. |

Observations. Through the observations, I was able to see students discuss the text and other course materials, such as lecture material or articles. It was not easy to tell if students did the assigned readings in most classes. In multiple classes, the breakout rooms were silent when students discussed the text or were assigned discussion questions. One observation stood out in particular because two participants admitted to not reading the book. One of those participants said, “how can she [professor] expect us to read 90 pages when we had all this other work.”

I observed one Socratic seminar where students were really engaged with the course material. In this class, students were given detailed instructions and expectations for breakout rooms and had difficult topics, such as race and gender. In these two breakout rooms, almost every student had their cameras on. However, I did also observe that the same students did do...
most of the talking, which is not surprising based on previous research (Fritschner, 2000; Howard et al., 1996; Karp & Yoels, 1976). The professor joined each breakout room to moderate and help engage everyone in the discussion. These students had meaningful conversations about the discussion questions and texts. In Table 8, there are direct quotes as examples of the Socratic seminar from participants.

**Table 8**

*Direct quotes from observations of a Socratic seminar*

<table>
<thead>
<tr>
<th>Quote</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do the identities affect you? I have not personally gone through any negatives, except being a female and having certain disadvantages and being stereotyped. For example, not knowing anything about sports. Males will assume I don’t know; we do know, we are the same and should be treated with the same respect.</td>
<td></td>
</tr>
<tr>
<td>I feel everything that happened in the last year [police brutality cases] was really eye opening, not glad it happened but kind of am, because it really opened everyone’s eyes.</td>
<td></td>
</tr>
<tr>
<td>I think he [author] sees that if you are black, you have to live like that for the rest of your life, in that fear and racism is always part of your life, always doing the right thing, always going to live in that mindset because of how the world is.</td>
<td></td>
</tr>
</tbody>
</table>

Finally, I observed how some students did or did not engage within a course lecture. Two sections stood out: one for high engagement and one for low. In the first section, the professor assigned mini activities where students had to take a guess and place their answer in the chat. For the professor’s first example, five participants answered in the chat. For the second example, two participants answered in the chat. Various activities throughout the lecture and the utilization of the chat feature demonstrated a way for students to engage while learning the material.

In the example of lower engagement, the professor had low attendance, no camera use, and did not use the chat besides an opening activity. The professor did not check for participation
during the article review and previous lesson. In addition, the professor played a video that made
the class go over time, not allowing for students to debrief the video.

**Theme #3: Desire to Learn Course Material**

**Inferential Quantitative Results from Theme #3: Desire to Learn Course Material**

The statements I included in this third theme go beyond getting a good grade in a course
and have to do with understanding the course material and applying it to the student’s own life.
This grouping all shares a common theme, which is theme #3: desire to learn the course material.
The following OSE statements are included in this theme: (1) finding ways to make the course
material relevant to my life, (2) applying course material to my life, (3) finding ways to make the
course interesting to me, and (4) really desiring to learn the material.

I completed six paired t-tests between the four statements, and four out of the six pairings
were considered statistically significant. They were (1) finding ways to make the course material
relevant to my life and finding ways to make the course interesting to me, (2) finding ways to
make the course material relevant to my life and really desiring to learn the material, (3)
applying course material to my life and finding ways to make the course interesting to me, and
(4) applying course material to my life and really desiring to learn the material.

There was a significant difference in the scores for “finding ways to make the course
material relevant to my life” and “finding ways to make the course interesting to me.” The first
statement, “finding ways to make the course material relevant to my life” had a mean of 3.46 and
a standard deviation of 1.00. The second statement, “finding ways to make the course interesting
to me,” had a mean was 3.73, with a standard deviation of 0.85. This yielded a result of the p-
value equaling 0.0231. This result is shown in Table 9.1.

**Table 9.1**
Paired t-test results for “finding ways to make the course material relevant to my life” and “finding ways to make the course interesting to me”

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding ways to make the course material relevant to my life</td>
<td>63</td>
<td>3.46</td>
<td>.1</td>
<td>.13</td>
<td>2.3295</td>
<td>0.0231</td>
</tr>
<tr>
<td>Finding ways to make the course interesting to me</td>
<td>63</td>
<td>3.73</td>
<td>.85</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In addition, “finding ways to make the course material relevant to my life” (M=3.46, SD=1.00) and “really desiring to learn the material” were statistically significant. “Really desiring to learn the material” had a mean of 3.75 and a standard deviation of 0.88. The p-value from these two statements equaled 0.021 as shown in Table 9.2. These results suggest that students struggled to find the content of the course relevant to their life but had a desire to learn it and find it interesting anyway.

Table 9.2

Paired t-test results for “applying course material to my life” and “finding ways to make the course interesting to me”

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding ways to make the course material relevant to my life</td>
<td>63</td>
<td>3.46</td>
<td>1</td>
<td>.13</td>
<td>2.3681</td>
<td>0.0210</td>
</tr>
<tr>
<td>Really desiring to learn the material</td>
<td>63</td>
<td>3.75</td>
<td>.88</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
There was a significant difference in the scores for “applying course material to my life,” which had a mean of 3.44 and standard deviation of 1.06 and “finding ways to make the course interesting to me” (M=3.73, SD=0.85). The p-value equaled 0.021, as can be shown in Table 9.3. This suggests they wanted the course material to be interesting to them but found it difficult to apply the material to their life.

Table 9.3

*Paired t-test results for “applying course material to my life” and “finding ways to make the course interesting to me”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applying course material to my life</td>
<td>63</td>
<td>3.44</td>
<td>1.06</td>
<td>.13</td>
<td>2.3681</td>
<td>0.0210</td>
</tr>
<tr>
<td>Finding ways to make the course interesting to me</td>
<td>63</td>
<td>3.73</td>
<td>.85</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Also, “applying course material to my life” (M=3.44, SD=1.06) and “really desiring to learn the material” (M=3.75, SD=0.88) were statistically significant with a p-value that equaled 0.0209. This can be shown in Table 9.4. These results are very similar to those in Table 9.3 above.

Table 9.4

*Paired t-test results for “applying course material to my life” and “really desiring to learn the material”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Descriptive Quantitative Results from Theme #3: Desire to Learn Course Material

Two of the statements that are very similar had similar averages: “finding ways to make the course material relevant to my life” (3.46) and “applying course material to my life” (3.44). The other two statements were ranked higher and also had similar averages: “finding ways to make the course interesting to me” (3.73) and “really desiring to learn the material” (3.75). As we can see from the graph below, the averages are similar but higher for learning the course material rather than applying the material outside the classroom.

Figure 4
Desire to Learn Course Material Line Graph
Qualitative Results from Theme #3: Desire to Learn Course Material

The purpose of the RSS 100 course is to provide reading and study skills necessary for college-level courses. I was able to see students’ desire to learn the course material through the journal entries.

Journal Entries. Students were asked how this material will help in future classes and their answers varied. This question went beyond wanting to get a good grade in the course and required students to think about the course, the material, what they learned, and how that will help them in other courses. Table 10.1 includes direct quotes from students who were asked to answer the prompt: “The material I have learned so far will help me in my future classes by …” These students mentioned study skills in their answers, one of the goals of the course.

Table 10.1

Direct quotes from student journals from participants who mentioned study skills when talking about how the course material will help them in future classes

<table>
<thead>
<tr>
<th>The material I have learned so far will help me in my future classes by how to study better and stay active in class.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The material I have learned so far will help me in my future classes by being able to manage my time and study better.</td>
</tr>
<tr>
<td>The material I have learned so far will help me in my future classes by teaching me how to prepare for a test and how to study.</td>
</tr>
<tr>
<td>The material I have learned so far will help me in my future classes by helping me study more efficiently in my other classes and using better strategies to study.</td>
</tr>
</tbody>
</table>

Some students talked about other academic skills in their journal response as can be seen in Table 10.2.

Table 10.2
Direct quotes from student journals from participants who mentioned other academic skills when talking about how the course material will help them in future classes

The material I have learned so far will help me in my future classes by preparing for success. I will have better test taking skills, time management, and understanding how to live a balanced lifestyle in college.

The material I have learned so far will help me in my future classes by using a weekly/daily planner to prioritize my events.

The material I have learned so far will help me in my future classes by making me a better reader, writer, and thinker.

The material I have learned so far will help me in my future classes by helping me become more conscious of how well I’m learning and how to better manage my time.

Theme #4: Engagement with Peers

Inferential Quantitative Results from Theme #4: Engagement with Peers

The final grouping had to do with student interaction with fellow students in an online setting. The statements I created for this theme include: (1) having fun in online chats, discussions or via email with the instructor or other students, (2) participating actively in small-group discussion forums, (3) helping fellow students, (4) engaging in conversations online (chat, discussions, email), (5) posting in the discussion forum regularly, and (6) getting to know other students in the class.

This was the largest number of statements in one grouping, and I completed a total of 15 paired t-tests. Out of those 15, five were considered to be statistically significant: (1) having fun in online chats, discussions or via email with the instructor or other students and participating actively in small-group discussion forums, (2) having fun in online chats, discussions or via email with the instructor or other students and engaging in conversations online (chat, discussions, email), (3) having fun in online chats, discussions or via email with the instructor or
other students and posting in the discussion forum regularly, (4) helping fellow students and engaging in conversations online (chat, discussions, email), and (5) engaging in conversations online (chat, discussions, email) and getting to know other students in the class.

The majority of differences in this theme had to do with students having fun in online engagement. First, there was a significant difference in the scores for “having fun in online chats, discussions or via email with the instructor or other students” and “participating actively in small-group discussion forums.” The mean for “having fun in online chats, discussions or via email with the instructor or other students” was 3.54 with a standard deviation of 1.06. The mean for “participating actively in small-group discussion forums” was 3.92, and the standard deviation was 0.94. This had a $p$-value that equaled 0.0050 as shown in Table 11.1.

**Table 11.1**

*Paired t-test results for “having fun in online chats, discussions or via email with the instructor or other students” and “participating actively in small-group discussion forums”*

<table>
<thead>
<tr>
<th>Group</th>
<th>$N$</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having fun in online chats, discussions or via email with the instructor or other students</td>
<td>63</td>
<td>3.54</td>
<td>1.06</td>
<td>0.13</td>
<td>2.9118</td>
<td>0.0050</td>
</tr>
<tr>
<td>Participating actively in small-group discussion forums</td>
<td>63</td>
<td>3.92</td>
<td>0.94</td>
<td>0.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Next, “having fun in online chats, discussions or via email with the instructor or other students” ($M=3.54$, $SD=1.06$) had a significant difference from “engaging in conversations
online (chat, discussions, email),” which had a mean of 3.97 and standard deviation of 0.74. This created a $p$-value of 0.0005 as shown in Table 11.2.

**Table 11.2**

*Paired t-test results for “having fun in online chats, discussions or via email with the instructor or other students” and “engaging in conversations online (chat, discussions, email)”*

<table>
<thead>
<tr>
<th>Group</th>
<th>$N$</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having fun in online chats, discussions or via email with the instructor or other students</td>
<td>63</td>
<td>3.54</td>
<td>1.06</td>
<td>.13</td>
<td>3.6644</td>
<td>0.0005</td>
</tr>
<tr>
<td>Engaging in conversations online (chat, discussions, email)</td>
<td>63</td>
<td>3.97</td>
<td>.74</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Finally, “having fun in online chats, discussions or via email with the instructor or other students” (M=3.54, SD=1.06) was also significantly different than “posting in the discussion forum regularly.” The second statement had a mean of 3.86 and standard deviation of 0.95. The $p$-value equaled 0.0381. This can be shown in Table 11.3. All of these results suggest that students will do what is required of them for online engagement, including posting and engaging in online forums, but do not perceive those engagements as fun.

**Table 11.3**

*Paired t-test results for “having fun in online chats, discussions or via email with the instructor or other students” and “posting in the discussion forum regularly”*
“Helping fellow students” had a mean of 3.75 and a standard deviation of 0.84. There was a significant difference between that statement and “engaging in conversations online (chat, discussions, email)” (M=3.97, SD=0.74). As shown in table 11.4, the p-value equaled 0.0296.

### Table 11.4

**Paired t-test results for “helping fellow students” and “engaging in conversations online (chat, discussions, email)”**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having fun in online chats, discussions or via email with the instructor or other students</td>
<td>63</td>
<td>3.54</td>
<td>1.06</td>
<td>.13</td>
<td>2.1192</td>
<td>0.0381</td>
</tr>
<tr>
<td>Posting in the discussion forum regularly</td>
<td>63</td>
<td>3.86</td>
<td>.95</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In addition, there was a difference between “engaging in conversations online (chat, discussions, email)” (M=3.97, SD=0.74) and “getting to know other students in the class.” The second statement had a mean of 3.73 with a standard deviation of 0.94. The p-value equaled
0.0461, which can be seen in Table 11.5. Similar to the results regarding having fun in online engagement, these results suggest that students will do what is required of them in online discussions but are less likely to get to know or help other students.

Table 11.5

*Paired t-test results for “engaging in conversations online (chat, discussions, email)” and “getting to know other students in the class”*

<table>
<thead>
<tr>
<th>Group</th>
<th>$N$</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaging in conversations online (chat, discussions, email)</td>
<td>63</td>
<td>3.97</td>
<td>.74</td>
<td>.09</td>
<td>2.0358</td>
<td>0.0461</td>
</tr>
<tr>
<td>Getting to know other students in the class</td>
<td>63</td>
<td>3.73</td>
<td>.94</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Descriptive Quantitative Results from Theme #4: Engagement with Peers*

The last grouping of statements from the OSE scale was the largest one, with six total statements having to do with engaging with peers in the course. Students perceived “engaging in conversations online (chat, discussions, emails)” (3.97) as the highest in this theme and “having fun in online chats, discussions or via email with the instructor or other students” (3.54) at the lowest. The second-highest average in this grouping was “participating actively in small-group discussion forums” (3.92), which is not surprising since it is closely worded with the highest statement. The third highest average was “regularly posting in the discussion forum” (3.86). Finally, the fourth and fifth rankings were close together: “helping fellow students” (3.75) and “getting to know other students in the class” (3.73), which both focus on classmate interaction
beyond discussion posts. As we can see in the graph below, students will typically do what is required of them in an online course; however, they perceive a level of “fun” as lower.

**Figure 5**

*Engagement with Peers Line Graph*

![Engagement with Peers Graph](image)

**Qualitative Results from Theme #4: Engagement with Peers**

Students had multiple opportunities to demonstrate their engagement through the course, including in the virtual class and discussion posts on the Institution’s LMS. I observed multiple class sections, reviewed the participant’s discussion posts, and analyzed the participant’s journal entries, which all demonstrated peer engagement.

**Journal Entries.** Students were asked to describe two ways they contribute to the class community. The second prompt asked students how they had learned from the class community. Students shared similar answers for the first prompt, including participating in discussions, starting conversations in breakout rooms, sharing in class, and turning on their cameras. Some participants were more descriptive in their answers than others.
Table 12.1 includes direct quotes from participants responding to the prompt, “describe two ways, using specific examples, that you give to the class community.” These students were specific in their answers.

**Table 12.1**

*Direct quotes from student journals from participants who were specific in their answers to the prompt regarding giving to the class community*

<table>
<thead>
<tr>
<th>Quote</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>I always participate in class discussions by stating what I think about the subject at hand. I also always answer in the class discussions for each prompt.</td>
<td></td>
</tr>
<tr>
<td>I participate in class discussions and also partake in sharing [my] answers [out loud].</td>
<td></td>
</tr>
<tr>
<td>I give to the class because in breakout rooms I always am the first to talk and start conversation. In addition, I keep the ball rolling in break out rooms and try my best to be the one who answers in the main class if no one is answering.</td>
<td></td>
</tr>
<tr>
<td>I think that I am an active participant and I have heard from others in the class that the reason they sometimes don’t have their cameras on is because they are the only ones. I try to turn my camera on as much as possible so those who feel awkward or uncomfortable will feel more welcomed to turn theirs on as well.</td>
<td></td>
</tr>
<tr>
<td>I give to the class community by showing up everyday and participating in the group by asking questions and sharing my ideas. I also help out my peers in the breakout rooms if they have questions.</td>
<td></td>
</tr>
<tr>
<td>I will always participate in group projects, discussions, etc. I will share my own ideas that maybe can help someone else if they’re stuck.”</td>
<td></td>
</tr>
</tbody>
</table>

Not all students were specific in their answers, as shown in Table 12.2. The majority of answers mirrored the above statements from Table 12.1; however, there are examples of less specific answers that can be construed as a joke or lack of interest.

**Table 12.2**

*Direct quotes from student journals from participants who were not specific in their answers to the prompt regarding giving to the class community*
My great vibe and my responses.

I'd say my willingness to learn and help.

I will always be there if anyone needs to talk. I feel that I am a nice guy and easy to work with.

I don’t know.

The second prompt asked students what they had learned from the class community. The answers varied and included students receiving support from other students, learning how to interact with other students, adapting to others learning styles. Some participants provided specific examples of classmates assisting them. Table 12.3 includes direct quotes from participants responding to the prompt, “describe two ways, using specific examples, that you have learned from the class community.” These include participations who were detailed in their answers and one who was not.

Table 12.3

Direct quotes from student journals from participants who were specific in how they have learned from the class community and one who was not

I have learned that everyone else is going through this program together and that we all most likely have the same struggles. I learned that it is okay to need and ask for help from professors, tutors, and other students.

I have learned a lot from the class community, one being that interacting with your camera on is much better and more personal than without. I have also learned that many people are in the same situation as me and struggle with being disorganized, and that I am able to change that.

[Other participant] has helped me be more sociable when we first started zoom class, by talking first in the [two] of [three] breakout rooms first created. I have learned to apply metacognition in my daily life and understand how some techniques I’ve [applied] throughout my life are actual valid learning strategies.

One thing that I have learned from our class community is that, sometimes it may take some time for people to open [up]. Not everyone is able to hold a long conversation or just start talking. For example, in one of my small groups I went in, turned on my camera and tried to
talk and no one said anything. I am learning that even though I’m very outgoing, some might not be and that’s okay.

I can't really think of anything yet that I have learned from the class community.

In addition, there were other students that answered the question, but they talked more about what they have learned from the material and not about what they learned from their classmates.

**Observations.** Observations provided an opportunity to see how students interacted with each other and their professors in class. The sections varied on how much students interacted with each other from high interaction to little or no interaction. Out of the nine sections I observed, I found three to have low participation levels, three to have moderate participation levels, and three to have high participation levels. I made these conclusions through measuring how much students talk in the main room with each other and the professor, amongst their peers in breakout rooms, through the chat, and if they kept their cameras on.

**Figure 6**

*Participant Levels in Observation*
High Participation. I considered three classes to have high participation levels. These were three different sections but only two different professors. Both professors had most students with their cameras on, multiple students using the chat feature, and independence within the breakout rooms for peer engagement. For example, in the first two classes, the professor used the chat feature to have students answer questions throughout a short lecture to check for understanding. The third class from this group was the Socratic seminar activity that talked about race issues and had students continuously talking in the breakout rooms, whether or not the professor was present.

Moderate Participation. I classified three classes taught by three different professors as moderate participation levels. These classes had fair camera use, typically turned on after professor prodding, and used the chat in moderate use. Examples of moderate chat use included professors putting questions into the chat for reference in breakout room discussions and
professors requiring students to type there in place of raising their hand, so students are not talking over each other. In one of the sections, the professor had to push students to participate and even mentioned how difficult it was to get the students to talk that day; however, the students did engage with each other in the breakout rooms.

**Low Participation.** The final classes were low participation levels, where the professor did the majority or all the talking. The class, which featured a video that went overtime, is significant because it shows students value their time. They are less likely to participate if it is after the class is supposed to end. Additionally, there was low to no chat use and camera use in these classes, so it was difficult to tell if students were even sitting at their computers during the class at times. Finally, these classes were more likely to have completely silent breakout rooms. I switched between the breakout rooms as much as possible when observing. All three of these sections had half of the breakout rooms completely silent every time I observed them. I checked in up to three times and each time there was complete silence.

**Discussion Posts.** Hew and Cheung (2008) studied the use of discussion posts and found them to be more meaningful and in-depth, with established rules and students contributing to the conversation and types of questions asked. All nine of these sections used various questions; however, some may have used six discussion post prompts, while another professor used an extra one. The discussion posts had a very distinct pattern: students started the semester completing the discussion posts, and that number of completed discussion posts went down through the semester. By the end of the semester, the average of completed discussion posts of participants was 73%. There were 11 participants that had at least 50% of their discussion posts missing. There was a total of 61 replies to other discussion posts between the 63 participants. These posts
were not interactive, meaning students would complete the required question and not reply to the other posts. The engagement levels for discussion posts were very low across the sections.

**Cross-Theme Results**

The last relevant piece of data was the cross-theme t-test results. Out of 134 paired t-tests, 63 were considered to be statistically significant. Of those 63, I focused on the ones that were extremely statistically significant (p-value is equal to 0.001 or less). The following statements were in that category. The statement “making sure to study on a regular basis” (theme #1) was statistically significant from multiple other statements:

- From theme #2, it was significantly different from: (1) staying up on the readings, (2) being organized, (3) taking good notes over readings, PowerPoints, or video lectures, and (4) listening/reading carefully.

- From theme #3, it was significantly different from: (1) finding ways to make the course interesting to me and (2) really desiring to learn the material.

- From theme #4, it was significantly different from: (1) participating actively in small-group discussion forums, (2) helping fellow students, (3) engaging in conversations online (chat, discussions, email), (4) posting in the discussion forum regularly, (5) getting to know other students in the class.

These results created new themes that emerged from these t-tests. The first was students not studying on a regular basis even though they rank similar engagement higher, including taking good notes and being organized. One of the most important results is that students’ effort levels were perceived to be high; however, that differed from their engagement with items that required effort. Finally, students desired a good grade in the course and ranked more characteristic; however, as stated previously, they were not doing some of the things required for
that, including looking over notes and making connections with the course material. Most of the differences in this cross-theme had to do with the first theme: grade-based engagement.

Theme #1 (grade-based engagement) has the most extreme significant differences for the cross-theme results. There was an extremely significant difference in the scores for “making sure to study on a regular basis,” where the mean was 3.24 and standard deviation was 0.78, and all statements in theme #2 (engagement with course material and organizational skills). The first difference was “staying up on the readings,” which had a mean of 3.65 and standard deviation was 0.81, which had a $p$-value of less than 0.0001. This is shown in table 13.1. This finding is surprising as it implies participants do not make sure they study regularly; however, they are more likely to stay up on the readings, which are similar activities.

**Table 13.1**

*Paired t-test results for “making sure to study on a regular basis” and “staying up on the readings”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>4.6125</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Staying up on the readings</td>
<td>63</td>
<td>3.65</td>
<td>.81</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The next difference from “making sure to study on a regular basis” (M=3.24, SD=0.78) was “being organized.” The second statement had a mean of 3.71 and standard deviation of 1.10, which yielded a $p$-value that equaled 0.0010. This can be seen in Table 13.2. These findings suggest that students place their organizational skills above making sure they are studying.
Paired t-test results for “making sure to study on a regular basis” and “being organized”

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>3.4663</td>
<td>0.0010</td>
</tr>
<tr>
<td>Being Organized</td>
<td>63</td>
<td>3.71</td>
<td>1.10</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The third difference from “making sure to study on a regular basis” (M=3.24, SD=0.78) was “taking good notes over readings, PowerPoints, or video lectures.” This statement had a mean of 3.83 and standard deviation of 0.93. This yielded a \( p \)-value of less than 0.0001 as shown on Table 13.3. Similar to the previous table, these results suggest that students prioritize taking good notes over studying those notes.

Table 13.3

Paired t-test results for “making sure to study on a regular basis” and “taking good notes over readings, PowerPoints, or video lectures”

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>5.2292</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Taking good notes over readings, PowerPoints, or video lectures</td>
<td>63</td>
<td>3.83</td>
<td>.93</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The final difference within theme #2 from “making sure to study on a regular basis” (M=3.24, SD=0.78) was “listening/reading carefully.” This final statement from theme #2 had a
mean of 3.87, and a standard deviation of 0.79. This yielded a $p$-value of less than 0.0001 as shown on Table 13.4. These findings suggest that students will pay more attention in class and with their homework rather than studying outside of class.

Table 13.4

*Paired t-test results for “making sure to study on a regular basis” and “listening/reading carefully”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>6.5588</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Listening/reading carefully</td>
<td>63</td>
<td>3.87</td>
<td>.79</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was an extremely significant difference in the scores for “making sure to study on a regular basis” (M=3.24, SD=0.78) and half the statements in theme #3 (desire to learn course material). The first difference was “finding ways to make the course interesting to me,” where the mean was 3.73 and standard deviation was 1.85. The $p$-value equaled 0.0001. This can be shown in Table 13.5. These results suggest that students are more likely to try and find the course material interesting to them rather than study that material.

Table 13.5

*Paired t-test results for “making sure to study on a regular basis” and “finding ways to make the course interesting to me”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>4.0469</td>
<td>0.0001</td>
</tr>
</tbody>
</table>
Finding ways to make the course interesting to me

The second difference from “making sure to study on a regular basis” (M=3.24, SD=0.78) was “really desiring to learn the material.” This statement had a mean of 3.75, with a standard deviation of 0.88. Similar to the previous table, the \( p \)-value equaled 0.0001 as shown in Table 13.6. These results are interesting because they are a bit contradictory and imply that students desire to learn the course material; however, they are not making sure to study the material on a regular basis.

**Table 13.6**

*Paired t-test results for “making sure to study on a regular basis” and “really desiring to learn the material”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>6.5588</td>
<td>0.0001</td>
</tr>
<tr>
<td>Really desiring to learn the material</td>
<td>63</td>
<td>3.75</td>
<td>.88</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was an extremely significant difference in the scores for “making sure to study on a regular basis” (M=3.24, SD=0.78) and all but one of the statements in theme #4 (engagement with peers). The first difference was “participating actively in small-group discussion forums,” where the mean was 3.92 and standard deviation was 0.94. This yielded a \( p \)-value of less than
0.0001. This can be seen in Table 13.7. These results suggest that students would rather participate in small groups than study regularly.

**Table 13.7**

*Paired t-test results for “making sure to study on a regular basis” and “participating actively in small-group discussion forums”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>5.183</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Participating actively in small-group discussion forums</td>
<td>63</td>
<td>3.92</td>
<td>.94</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The second difference from “making sure to study on a regular basis” (M=3.24, SD=0.78) was “helping fellow students” (M=3.75, SD=0.84), which created a p-value of less than 0.0001. This can be seen in Table 13.8. Similar to the previous results, perceived engagement with peers as a more characteristic trait than regular studying.

**Table 13.8**

*Paired t-test results for “making sure to study on a regular basis” and “helping fellow students”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>4.413</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Helping fellow students</td>
<td>63</td>
<td>3.75</td>
<td>.84</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The third difference from “making sure to study on a regular basis” (M=3.24, SD=0.78) was “engaging in conversations online (chat, discussions, email).” The second statement’s mean was 3.97, with a standard deviation of 0.74. The \( p \)-value was less than 0.0001. This is shown in Table 13.9 below. These results mirror the previous two tables and suggest that students engage more with peers online than study regularly in online classes.

**Table 13.9**

*Paired t-test results for “making sure to study on a regular basis” and “engaging in conversations online (chat, discussions, email)”*

<table>
<thead>
<tr>
<th>Group</th>
<th>( N )</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>6.8475</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Engaging in conversations online (chat, discussions, email)</td>
<td>63</td>
<td>3.97</td>
<td>.74</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The fourth difference from “making sure to study on a regular basis” (M=3.24, SD=0.78) was “posting in the discussion forum regularly.” This statement had a mean of 3.97 and standard deviation of 0.74. The \( p \)-value equaled 0.0001. This is shown below in Table 13.10. These findings propose that students are more likely to post on discussion forums for online classes rather than study every day.

**Table 13.10**

*Paired t-test results for “making sure to study on a regular basis” and “posting in the discussion forum regularly”*
The last difference from “making sure to study on a regular basis” (M=3.24, SD=0.78) was in the last category, which was theme #4, “getting to know other students in the class.” This statement had a mean of 3.73 and standard deviation of 0.94. This yielded a \( p \)-value equal to 0.0009, which is shown in Table 13.11. This continues to suggest that students engage more with their peers online, including getting to know others, rather than studying regularly.

**Table 13.11**

*Paired t-test results for “making sure to study on a regular basis” and “getting to know other students in the class”*

<table>
<thead>
<tr>
<th>Group</th>
<th>( N )</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making sure to study on a regular basis</td>
<td>63</td>
<td>3.24</td>
<td>.78</td>
<td>.1</td>
<td>4.6625</td>
<td>0.0001</td>
</tr>
<tr>
<td>Posting in the discussion forum regularly</td>
<td>63</td>
<td>3.86</td>
<td>.95</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The most significant differences came from the first theme, grade-based engagement. The statement “putting forth effort” was statistically significant from multiple other statements, including two from theme #2: (1) staying up on the reading and (2) looking over class notes
between getting online to make sure I understand the material. “Putting forth effort” was also significantly different from all of the statements in theme #3: (1) finding ways to make the course material relevant to my life, (2) applying course material to my life, (3) finding ways to make the course interesting to me, and (4) really desiring to learn the material. Finally, “putting forth effort” had a significant difference from half of the statements in theme #4, including (1) having fun in online chats, discussions or via email with the instructor or other students, (2) helping fellow students, and (3) getting to know other students in the class.

There was an extremely significant difference in the scores for “putting forth effort”, with a mean of 4.17 and standard deviation of 0.68 and half of statements in theme #2 (engagement with course material and organizational skills). The first difference was “staying up on the readings,” which had a mean of 3.65 and standard deviation of 0.81. The p-value equaled 0.0001. This is shown below in Table 13.12. These results are extremely interesting since participants rated their effort levels as very high but staying up on the readings as much lower.

**Table 13.12**

*Paired t-test results for “putting forth effort” and “staying up on the reading”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>.68</td>
<td>.09</td>
<td>6.2185</td>
<td>0.0001</td>
</tr>
<tr>
<td>Staying up on the reading</td>
<td>63</td>
<td>3.65</td>
<td>.81</td>
<td>.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The second difference from “putting forth effort” (M=4.17, SD=0.68) was “looking over class notes between getting online to make sure I understand the material.” This statement had a mean of 3.49, with a standard deviation of 0.95. The p-value was less than 0.0001, as can be
shown in Table 13.13. Similar to the above table, students rank their effort as high but one of the key efforts needed in a class, making sure one understands the material, as low.

**Table 13.13**

*Paired t-test results for “putting forth effort” and “looking over class notes between getting online to make sure I understand the material”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>.68</td>
<td>.09</td>
<td>5.8238</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Looking over class notes between getting online to make sure I understand the material</td>
<td>63</td>
<td>3.49</td>
<td>.95</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was an extremely significant difference in the scores for “putting forth effort” (M=4.17, SD=0.68) and all of the statements in theme #3 (desiring to learn the course material). The first difference was “finding ways to make the course material relevant to my life.” This statement’s mean was 3.46 and standard deviation was 1.00; this created a *p*-value of less than 0.0001. This is shown in Table 7.14. Students reported more frequently putting effort into the class versus finding it relevant to their lives.

**Table 13.14**

*Paired t-test results for “putting forth effort” and “finding ways to make the course material relevant to my life”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The second difference from “putting forth effort” (M=4.17, SD=0.68) was “applying course material to my life.” This statement had a mean of 3.44, with a standard deviation of 1.06. The p-value was less than 0.0001; this can be seen in Table 13.15. These results are very similar to those in Table 13.14.

Table 13.15

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>.68</td>
<td>.09</td>
<td>5.9203</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Finding ways to make the course material relevant to my life</td>
<td>63</td>
<td>3.46</td>
<td>1.00</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“Putting forth effort” (M=4.17, SD=0.68)” was significantly different from “finding ways to make the course interesting to me,” which had a mean of 3.73 and standard deviation of 0.85. The p-value was less than 0.0001 as shown in Table 13.16. Similar to the previous two in this category, these results suggest putting forth effort is more characteristic to students than finding the material interesting.

Table 13.16
Paired t-test results for “putting forth effort” and “finding ways to make the course interesting to me”

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>.68</td>
<td>.09</td>
<td>4.5326</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Finding ways to make the course interesting to me</td>
<td>63</td>
<td>3.73</td>
<td>.85</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The last difference from “putting forth effort” (M=4.17, SD=0.68)” in this category was “really desiring to learn the material.” This had a mean of 3.75, with a standard deviation of 0.88); the p-value was less than 0.0001. This can be seen in Table 13.17. These results are similar to the three tables above.

Table 13.17

Paired t-test results for “putting forth effort” and “really desiring to learn the material”

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>.68</td>
<td>.09</td>
<td>4.1614</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Really desiring to learn the material</td>
<td>63</td>
<td>3.75</td>
<td>.88</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was an extremely significant difference in the scores for “putting forth effort” (M=4.17, SD=0.68) and half of statements in theme #4 (engagement with peers). The first difference was “having fun in online chats, discussions or via email with the instructor or other
students” with a mean of 3.54 and standard deviation of 1.06. This is shown in Table 13.18. The $p$-value here equaled 0.0001. These results suggest that students are willing to put in the effort; however, they do not have fun doing so in online chats.

**Table 13.18**

*Paired t-test results for “putting forth effort” and “having fun in online chats, discussions or via email with the instructor or other students”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>.68</td>
<td>.09</td>
<td>4.3660</td>
<td>0.0001</td>
</tr>
<tr>
<td>Having fun in online chats, discussions or via email with the instructor or other students</td>
<td>63</td>
<td>3.54</td>
<td>1.06</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The second difference from “putting forth effort” (M=4.17, SD=0.68) was “helping fellow students.” This statement had a mean of 3.75 and standard deviation of 0.84. The $p$-value here equaled 0.0002 as shown in Table 13.19. These results suggest that when students consider putting forth effort in the class, it does not necessarily include helping fellow students.

**Table 13.19**

*Paired t-test results for “putting forth effort” and “helping fellow students”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>.68</td>
<td>.09</td>
<td>3.9740</td>
<td>0.0002</td>
</tr>
<tr>
<td>Helping fellow</td>
<td>63</td>
<td>3.75</td>
<td>.84</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The last difference from “putting forth effort” (M=4.17, SD=0.68) was “getting to know other students in the class,” which had a mean of 3.73 and standard deviation of 0.94. The \( p \)-value equaled 0.0005 as shown below in Table 13.20. These results are similar to the previous two tables, which suggest peer engagement is not necessarily included in effort levels.

**Table 13.20**

*Paired t-test results for “putting forth effort” and “getting to know other students in the class”*

<table>
<thead>
<tr>
<th>Group</th>
<th>( N )</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting forth effort</td>
<td>63</td>
<td>4.17</td>
<td>0.68</td>
<td>0.09</td>
<td>3.6613</td>
<td>0.0005</td>
</tr>
<tr>
<td>Getting to know other students in the class</td>
<td>63</td>
<td>3.73</td>
<td>0.94</td>
<td>0.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Also from theme #1, “getting a good grade” (theme #1) was statistically significant from five other statements across all themes: (1) staying up on the reading, (2) looking over class notes between getting online to make sure I understand the material, (3) finding ways to make the course material relevant to my life, (4) applying course material to my life, and (5) having fun in online chats, discussions or via email with the instructor or other students.

“Getting a good grade” had a mean of 4.03 and standard deviation of 0.76. This statement was different from two of the statements from theme #2. The first difference was “staying up on the reading” with a mean of 3.65 and standard deviation of 0.81. The \( p \)-value equaled 0.0003, which is shown below in Table 13.21. These results are another contradiction, where students
want a good grade; however, they rank staying up on the course readings as low, which is typically needed for a good grade.

**Table 13.21**

*Paired t-test results for “getting a good grade” and “staying up on the reading”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting a good grade</td>
<td>63</td>
<td>4.03</td>
<td>0.76</td>
<td>0.10</td>
<td>3.815</td>
<td>0.0003</td>
</tr>
<tr>
<td>Staying up on the reading</td>
<td>63</td>
<td>3.65</td>
<td>0.81</td>
<td>0.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The second difference from “getting a good grade” (M=4.03, SD=.76) was “looking over class notes between getting online to make sure I understand the material,” which had a mean of 3.49 and standard deviation of 0.95. This created a *p*-value less than 0.0001, which is shown in Table 13.22 below. These results are almost identical to the ones in Table 13.21 above, where getting a good grade is rated higher than activities needed for a better grade, including looking over notes and making sure one understands the course material.

**Table 13.22**

*Paired t-test results for “getting a good grade” and “looking over class notes between getting online to make sure I understand the material”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting a good grade</td>
<td>63</td>
<td>4.03</td>
<td>0.76</td>
<td>0.10</td>
<td>4.367</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Looking over class notes between getting</td>
<td>63</td>
<td>3.49</td>
<td>0.95</td>
<td>0.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
There was an extremely significant difference in the scores for “getting a good grade” (M=4.03, SD=.76) and two of the statements from theme #3 (desire to learn the course material). The first difference was “finding ways to make the course material relevant to my life” with a mean 3.46 and standard deviation of 1.00. The *p*-value was less than 0.0001 as shown in Table 13.23. These results suggest that getting a good grade ranked higher than students than finding the course material relevant.

**Table 13.23**

*Paired t-test results for “getting a good grade” and “finding ways to make the course material relevant to my life”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting a good grade</td>
<td>63</td>
<td>4.03</td>
<td>.76</td>
<td>.10</td>
<td>4.5566</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Finding ways to make the course material</td>
<td>63</td>
<td>3.46</td>
<td>1.00</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>relevant to my life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The second difference from getting a good grade” (M=4.03, SD=.76) was “applying course material to my life,” which had a mean of 3.44 and standard deviation of 1.06. The *p*-value equaled 0.0005, which can be seen in Table 13.24. This is similar to the results in the table above that getting good grades is more characteristic of students than applying the course material.
Table 13.24

*Paired t-test results for “getting a good grade” and “applying course material to my life”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting a good grade</td>
<td>63</td>
<td>4.03</td>
<td>.76</td>
<td>.10</td>
<td>3.5737</td>
<td>0.0005</td>
</tr>
<tr>
<td>Applying course material to my life</td>
<td>63</td>
<td>3.44</td>
<td>1.06</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was an extremely significant difference in the scores for “getting a good grade” (M=4.03, SD=.76) and one of the statements from theme #4 (engagement with peers). The only difference was “having fun in online chats, discussions or via email with the instructor or other students” with a mean of 3.54 and standard deviation of 1.06. The p-value equaled 0.0009, as shown in Table 13.25. These results suggest that getting a good grade is much more characteristic than having fun in online chats.

Table 13.25

*Paired t-test results for “getting a good grade” and “having fun in online chats, discussions or via email with the instructor or other students”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting a good grade</td>
<td>63</td>
<td>4.03</td>
<td>.76</td>
<td>.10</td>
<td>3.4878</td>
<td>0.0009</td>
</tr>
<tr>
<td>Having fun in online chats, discussions or via email with the instructor or other students</td>
<td>63</td>
<td>3.54</td>
<td>1.06</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The last three extremely significant statements were not part of the theme #1 (graded based engagement). They were from theme #4 (engagement with peers), specifically “engaging in conversations online (chat, discussions, email).” This statement had a mean of 3.97 and standard deviation of 0.74. The first difference was from theme #2 (engagement with course material and organizational skills) “looking over class notes between getting online to make sure I understand the material,” with a mean of 3.49 and standard deviation of 0.95. The $p$-value equaled 0.0002. This is shown in Table 13.26. These results suggest that engaging with peers occurred more frequently than reviewing course materials.

**Table 13.26**

*Paired t-test results for “engaging in conversations online (chat, discussions, email)” and “looking over class notes between getting online to make sure I understand the material”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaging in conversations online (chat, discussions, email)</td>
<td>63</td>
<td>3.97</td>
<td>.74</td>
<td>.09</td>
<td>3.9175</td>
<td>0.0002</td>
</tr>
<tr>
<td>Looking over class notes between getting online to make sure I understand the material</td>
<td>63</td>
<td>3.49</td>
<td>.95</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The last two differences were from theme #3 (desire to learn the course material). The first difference from “engaging in conversations online (chat, discussions, email)” (M=3.97, SD=0.74) was “finding ways to make the course material relevant to my life” with a mean of 3.46 and standard deviation of 1.00; the $p$-value equaled 0.0004. This is shown in table 13.27. These results suggest students are more interested in engaging with each other online versus finding the material relevant to their lives.

Table 13.27

*Paired t-test results for “engaging in conversations online (chat, discussions, email)” and “finding ways to make the course material relevant to my life”*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaging in conversations online</td>
<td>63</td>
<td>3.97</td>
<td>.74</td>
<td>.09</td>
<td>3.7478</td>
<td>0.0004</td>
</tr>
<tr>
<td>(chat, discussions, email)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finding ways to make the course material</td>
<td>63</td>
<td>3.46</td>
<td>1.00</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>relevant to my life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The last difference from the cross-theme $t$-tests was “engaging in conversations online (chat, discussions, email)” (M=3.97, SD=0.74) and “applying course material to my life.” The second statement had a mean of 3.44, and standard deviation of 1.06; the $p$-value equaled 0.0007 as can be seen in Table 13.28. Similar to the previous table, these results suggest engagement with peers was more frequent than making the course material relevant to a students’ life.

Table 13.28
Paired t-test results for “engaging in conversations online (chat, discussions, email)” and “applying course material to my life”

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaging in conversations online</td>
<td>63</td>
<td>3.97</td>
<td>.74</td>
<td>.09</td>
<td>3.578</td>
<td>0.0007</td>
</tr>
<tr>
<td>(chat, discussions, email)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applying course material to my life</td>
<td>63</td>
<td>3.44</td>
<td>1.06</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These results suggest students perceive their engagement as high when it comes to many things; however, one of those things is not making sure to study on a regular basis. Students reported a greater tendency to take good notes, be organized, participate in discussion forums, and get to know other students and help other students in the class as much more characteristic than daily studying. Second, the participants considered their effort levels as high, but that conflicted with statements that require high amounts of effort, such as staying on top of the readings, looking over notes to check for understanding, and applying the course material to the student’s life. Finally, students ranked their desire for a good grade in the course as high, but this conflicted with looking over the notes, checking for understanding, and applying the course material outside the classroom. Compared with the qualitative findings, these cross-theme statistical results will make for interesting conclusions of students perceived and demonstrated engagement levels.
Conclusion

In this chapter, I presented the results of this study and separated them into four themes: (1) grade-based engagement, (2) engagement with the course material and organizational skills, (3) desire to learn the course material, and (4) engagement with peers in the online course. Each of the themes included quantitative findings from inferential and descriptive statistics derived from the OSE scale. In addition, each theme included qualitative findings from journal entries, observations, and a review of the courses’ LSM page. This chapter included generalizations; the following chapter will include conclusions and further analysis of this data. The next chapter will also include a discussion of the data, limitations of this study, and implications for future research.
CHAPTER V: DISCUSSION

Introduction

The COVID-19 pandemic presented the opportunity to study an online summer bridge program that would typically be held in person to see how developmental students engage in an online setting. This chapter will summarize the study, discuss the results, connect those results to the theoretical framework, and specifically address the research questions. Finally, I will readdress the limitations of this study and propose future research in this area.

This study drew multiple conclusions. First, students wanted good grades and turned in what is required, but they were stretched thin with the amount of work due. Second, students were physically engaged with the materials in class, but this engagement was lower outside of class. Third, students did have a deep desire to learn the material; moreover, they were interested in applying it to future course work. Finally, there was a lack of community in the distance education version of this class, but the students participated when given the opportunity.

Summary of Study

The purpose of this study was to measure students’ perceived engagement levels in an online developmental education course. I used convergent mixed methods design, collected the qualitative and quantitative data simultaneously, and analyzed them separately to answer the research question:

1. How engaged are first-year developmental students in an online summer bridge program course?
   a. What are students’ perceived levels of engagement?
   b. In what ways are students demonstrating engagement?
The first sub-question (a) was answered using the Online Engagement (OSE) Scale developed by Dixon (2015) to measure students’ perceived engagement levels. Students’ perceived engagement levels were high across all categories. Students did seem stretched thin, so their daily studying practices were not as high. The second sub-question (b) was answered through the qualitative tools, including student journals, observations, and a review of the class assignments submissions and discussion posts on the institution’s LMS. Students demonstrated engagement in many ways, including interaction within the LMS, virtual classes participation, and turning in assignments. The main research question (1) was answered by combining the qualitative and quantitative data presented in chapter four. Students were very engaged in their summer bridge course even though it was online instead of in-person.

**Application of Conceptual Framework to Findings**

This study was grounded in Astin’s (1999) Theory of Student Involvement, which had five main pillars: (1) the physical and psychological involvement in learning, (2) involvement happens at different times for different students, (3) involvement can be measured in both quantitative and qualitative ways, (4) student involvement is necessary for the success of a student program, and (5) educational policy should increase student involvement. Astin (1999) also mentioned multiple verbs that are associated with involvement, including: “engage in… participate in… show enthusiasm for… take interest in…take part in…” (p. 519). These phrases allowed me to see my study on engagement through this lens of student involvement. As we can see in the results, the engagement in the online developmental program is multi-dimensional.

**Summary of Discussion of Results**

The results of the study were divided into four themes and included an additional section on cross-theme results. The four themes drew from quantitative and qualitative data, while the
cross-theme results were strictly quantitative from the OSE scale. The four themes were (1) grade-based engagement, (2) engagement with course materials and organizational skills, (3) desire to learn course material, and (4) engagement with peers. Additional themes arose through the cross-theme results, including study skills, effort levels, good grades, and online conversation with peers. Several of Astin’s (1999) Theory of Student Involvement pillars are relevant in each of those themes.

**Theme #1: Grade-based Engagement**

I put four statements from the OSE into this category, including (1) making sure to study on a regular basis, (2) putting forth effort, (3) getting a good grade, (4) doing well on the tests/quizzes. Through the $t$-tests, there was a statistically significant difference amongst multiple statements. One of the main conclusions that arose from this category is that students did not prioritize studying regularly in their online courses; however, they did perceive their effort levels and wanted to get a good grade as high. As stated previously, study skills are essential for academic success (Chilca Alva, 2017). One of the goals of developmental education is to improve those study skills (Boylan et al., 1999; Boylan, 2001; Bunner, 2018; Wyatt, 1996), so it is unsurprising that students perceived these skills as low while in the program. Previous research has shown that summer bridge programs and developmental education increase students’ study skills (Byrd & MacDonald, 2005; Stolle-MacAllister, 2011); however, this has not been studied in virtual programs.

The quantitative results in this section showed that students want to succeed in a course, but the qualitative data showed mixed results. The majority of participants did not mention studying daily in their journals; however, they did mention having their work completed and notes with them. Through a review of the assignments, I noticed that there was something due
almost every weekday for all sections. The average number of assignments due was 20.9 (the course had 24 instructional days). From all 63 participants, only 9 submitted 100% of all their assignments, with the average being 80.2% assignments completed for participants. In one of the observations, students were venting about the amount of work that was due and how it was challenging to stay up on the reading because of the amount of work assigned. As Astin (1999) pointed out, student involvement requires both physical and psychological energy, and those participation levels will vary depending on the time of day and other factors. No student can be expected to have that level of involvement at every moment of every day. These results suggest that with fewer assignments due throughout the course, students may be able to focus on their daily readings, review course material, and stay on top of those assignments.

**Theme #2: Engagement with Course Materials and Organizational Skills**

When discussing student engagement, the most common topic in participation research is students’ physical participation. For example, older students are more likely to participate than younger students in college classrooms (Howard et al., 1996; Weaver & Qi, 2005). Students in larger class sizes are less likely to participate than students in small classes (Karp & Yoels, 1976). When creating the OSE scale, Dixson (2015) went beyond physical participation characteristics and included engagement with course material and a student’s organizational skills. I grouped five statements from the OSE scale in this category: (1) staying up on the readings, (2) looking over class notes between getting online to make sure I understand the material, (3) being organized, (4) taking good notes over readings, PowerPoints, or video lectures, and (5) listening/reading carefully.

Overall, students rated their engagement with the course materials and their organizational skills as high on the OSE scale. Looking over notes was ranked lowest in this grouping, which
goes back to the conclusion that students have too much work and requirements to complete in a short time to study daily and review their materials. Once again, this can be seen through the Theory of Student Involvement, which helps us understand the significance of the findings. Students’ engagement levels will vary depending on the time of day and type of activity (Astin, 1999). These students perceived themselves as quite involved with their course material, but much work was due in the program. All students were in the RSS 100 class, one course for math or writing, tutoring sessions, other workshops, and possible commitments outside the SA Program. The Theory of Student Involvement states that program policies should incorporate as much student involvement as possible. However, the policies of this program were not addressed in this study since it focused on the RSS 100 course instead of involvement in the program as a whole.

Students mentioned multiple ways that they engage with their course material in the journal entries. Students noted organization techniques, such as labeling notes, using bullet points, and organizing by color. Some participants were in-depth and discussed having different notebooks and folders for the class, whether physical or virtual. In addition, students detailed how they organize their materials by day and color. While students may not be studying every day, they seemed to take pride in their organizational and listening skills for class. The results from this theme related to Astin’s (1999) third pillar:

Involvement has both quantitative and qualitative features. The extent of a student’s involvement in academic work, for instance, can be measured quantitatively (how many hours the student spends studying) and qualitatively (whether the student reviews and comprehends reading assignments or simply stares at the textbook and daydreams) (p. 519).
Engagement can be measured in both quantitative and qualitative ways. These students may not have the time to spend hours studying and making sure they understand the material. However, they do have involvement in the physical class by actively listening, taking notes, and ensuring the assigned work is complete. While the first theme revealed student engagement was dampened by workload, this second theme shows that engagement was thus bifurcated by physical presence in class, as an example of high engagement, and psychological engagement out of class, an example of lower engagement.

**Theme #3: Desire to Learn Course Material**

The participants in this study perceived their want for a good grade in this course as high, and student engagement can lead to higher course grades (Handelsman et al., 2005; Tayebnik & Puteh, 2013). This is an example of extrinsic motivation, while a desire to really learn the material would be an example of intrinsic motivation. However, these two motivations can be used together when professors use that desire for a good grade to have students desire to learn the course material (Bolliger and Halupa, 2018). The OSE scale included a desire to learn the course material when discussing student engagement. I included the following four statements from the OSE scale in this category: (1) finding ways to make the course material relevant to my life, (2) applying course material to my life, (3) finding ways to make the course interesting to me, and (4) really desiring to learn the material.

The students showed that they desired to learn the course material through both the quantitative and qualitative tools. Students also struggled more to apply the material of the RSS 100 course and find it relevant to them; however, they wanted to find it interesting, and they had a high desire to learn the content. The desire to learn the course material really came out in the qualitative data.
Astin’s (1999) fourth pillar reveals that the purpose of any academic program should include student involvement in the program. The purpose of the SA program is to improve a student’s academic skills and prepare students for college; the purpose of the RSS 100 course is to help students build study and reading skills. Students mentioned many of those characteristics through the journal entries, including improved study and time management skills. A few students’ responses particularly stood out because they mentioned using the course material to balance their future college life, prioritize activities, and make better decisions for their academic lives.

**Theme #4: Engagement with Peers**

One of the biggest disadvantages of distance education is a lack of community (Song et al., 2004). Oztok (2013) argued that if participation is presented in the correct way, including multiple ways for students to be involved through synchronous and asynchronous methods, students can be engaged in online classes. Dixson (2015) included multiple statements in the OSE scale that had to do with peer engagement, and I included them in the fourth theme. Those statements are: (1) having fun in online chats, discussions or via email with the instructor or other students, (2) participating actively in small-group discussion forums, (3) helping fellow students, (4) engaging in conversations online (chat, discussions, email), (5) posting in the discussion forum regularly, and (6) getting to know other students in the class.

Through the quantitative results, students showed they perceived their engagement with peers as high; however, they did not necessarily have fun doing so. While they are willing to participate in small group settings, engage in other online settings, and post on discussion forums, they are less likely to want to help fellow students or get to know them. These results support the previous research that there is a lack of community in distance education (Song et al.,
While Astin (1999) did not specifically look at peer groups and student involvement, he did mention that “it would be useful to determine whether similar relationships exist at the postsecondary level … whether different types of student peer groups can be consciously used to enhance student involvement in the learning process” (p. 528). I argue that based on the results of this study and previous research, that student peer groups can enhance student involvement in the learning process.

There were mixed results in the qualitative data. For example, students reflected in the journal entries that they will participate in breakout rooms and consider themselves as active participants in their classroom; however, the observations showed this to be true about half of the time in the breakout rooms. It appeared that with more structure, such as specific tasks, instructions, and discussion questions, students were more likely to engage with their peers in the breakout rooms. In addition, when there was high attendance, high camera use, and when professors encouraged the use of the chat feature on Zoom, the participation was higher in that class.

The results in this theme are grounded in the second pillar of Astin’s (1999) Theory of Student Involvement: “regardless of its object, involvement occurs along a continuum; that is, different students manifest different degrees of involvement in a given object, and the same student manifests different degrees of involvement in different objects at different times” (p. 519). Student engagement will vary based on the type of activity, the mode of participation, and the time of day. As Oztok et al. (2013) argued, there should not be one form or way for students to participate, and educators should utilize the different tools available in virtual learning. The results of this study showed that when given different opportunities to participate, students were more likely to be involved in the learning process.
Cross-Theme Discussion

Through the quantitative cross-theme results, a few statements from the OSE scale stood out and created new emerging themes. These statements included (1) making sure to study on a regular basis, (2) putting forth effort, (3) getting a good grade, and (4) engaging in conversations online (chat, discussions, email). The first three were from theme #1: grade-based engagement, and the last was from theme #4: engagement with peers.

Regular Studying. As mentioned before, participants did not perceive themselves as daily studiers. Students ranked their notetaking and listening skills as much higher. In addition, students were more likely to perceive their engagement levels with peers, including getting to know their classmates, engaging with conversations online, and helping fellow students as much higher. Since studying can happen in groups, it would be interesting to allow students to have virtual study groups. I did observe this peer engagement through the observations in this study. It would be interesting to see how students’ study skills improved during an online program since the purpose of this program and course is to help students improve their studying skills.

Effort Levels. Students perceived their effort levels as high, but this had a significant difference with other statements, including studying regularly, looking over notes, desiring to learn the course material, and getting to know other students in the class. Through the observations and journal entries, students showed their effort levels in other ways, including turning in assignments, posting on discussion forums, and organizing their notes. Overall, the effort levels were high in RSS 100. Students struggled in some of those more conventional items that required effort in the classroom; however, improving those skills is exactly the purpose of summer bridge programs (Strayhorn, 2011; Stolle-MacAllister, 2011) and developmental education (Boylan, 2001; Byrd & MacDonald, 2005; Wyatt, 1996).
**Good Grades.** Students perceived their effort levels as high through the OSE scale and demonstrated effort levels differently. The highest-ranked category of the OSE scale in this study was wanting a good grade. Results also suggested that students prioritized getting a good grade as higher rather than relating to and understanding the material. Through the assignment review, around 80% of participants had turned in all of their assignments, which shows that students wanted a good grade and turned in most assignments for the class. Grades can be used as a motivator to get students engaged with the course material (Bolliger & Halupa, 2018).

**Engaging in Conversations Online.** Since students could not meet in person due to the pandemic, conversing online was very important for involvement in the online course. The results showed that students were more likely to engage with their peers online rather than look over their notes or find the material relevant to them. Educators should provide students with ample opportunities to engage with their peers in asynchronous and synchronous ways (Hew & Cheung, 2008; Oztok, 2013). By doing so, it will help students learn the materials through discussion.

**Connection to Cross-Theme Results & Theoretical Framework.** The results in the cross-theme section showed that participants perceived their engagement levels as high when it comes to taking notes, organizing their materials, listening in class, participating in small-group sessions, and engaging in online conversations. Astin (1999) argued in his fourth pillar that “the amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program” (p. 519). These participants are clearly involved in their own learning process, contributing to the SA program’s success.
Discussion of Research Questions

How engaged are first-year developmental students in an online summer bridge program course?

Students’ engagement levels were very high in this summer bridge program course. The program studied was online due to the COVID-19 pandemic. Students were required to complete their courses, tutoring, and advising appointments through different virtual modalities, including Zoom and the use of the LMS. Students perceived their engagement levels as average or above average in most categories in the OSE scale. The majority of participants showed online engagement by talking aloud in class, utilizing the chat feature, having their cameras on, posting on the discussion forums, and turning in required assignments.

What are students’ perceived levels of engagement? Students perceived their engagement levels as high across the themes, as shown in the chart below, which is promising. Since previous research has shown that engagement is important in an online course for students to be successful (Kuh & Umbach, 2004; Girgin & Stevens, 2005; Handelsman et al., 2005; Tayebinik & Puteh, 2013), it is essential to have students participate. Research into developmental education encourages students to be involved in their learning to be successful (Baker, 2018; Murphy et al., 2010; Stolle-McAllister, 2011; Strayhorn, 2011). In addition, Astin’s (1999) Theory of Student Involvement, in which this study is grounded, insists that students be involved in their learning to succeed in a course or program. Indeed, students in this course were engaged because they were relatively involved across its many aspects. They understood themselves to be involved as well.

Figure 7

Cross-Theme Bar Graph
The above chart shows that students perceived their effort level as the highest characteristic; however, the lowest characteristic involved regular studying. As stated previously, these findings recommend fewer assignments in such courses and future research on the study skills of developmental students at the beginning and end of an online summer bridge program.

When it comes to engaging online, the participants showed they prioritized getting a good grade and succeeding in the course, wanted to have relationships and participate with their classmates, and will listen in class and do assignments when told. If practitioners could improve the studying, organization, and relating the course material to students’ lives, these engagement levels could improve.

**In what ways are students demonstrating engagement?** Students demonstrated engagement in numerous ways during the online course, and they invested their energy heavily in specific ways (Astin, 1999). Examples of this engagement included talking in the virtual class,
using the chat in class, turning class assignments in, and posting on discussion boards when prompted by the professor. Students were more likely to participate when their cameras were on or when the professor prompted discussion. Professor rapport is an essential factor in student participation (Frisby et al., 2014). Students were very engaged in activities that encouraged discussion, like the Socratic seminar example. Students seemed to do what was expected of them for the discussion posts but were less likely to engage in this forum highly. This is unsurprising, as previous research on the use of discussion posts in online classes finds them less useful without structure and student input (Hew & Cheung, 2008).

When given the structure necessary to have insightful conversations, such as discussion questions and clear instructions, the students were very engaged with each other. However, in some of the breakout rooms, full rooms would be silent. This information can be used to encourage more structure in these small group sessions. In addition, professors need to encourage participation from all students. In the observations from this study, some students did the majority of the talking in breakout rooms or in the main room, which is backed by previous research (Fritschner, 2000; Howard et al., 1996; Karp & Yoels, 1976). One of the professors utilized the chat to raise their hands to talk in order virtually. By doing this, everyone had their opinions heard, and no students were talking over each other.

**Recommendations**

Based on the conclusions above, I give the following recommendations for a virtual summer bridge program. First, I suggest fewer assignments so that students can focus on their daily reading and have more time to review course materials. With fewer assignments, students can focus on the quality of work versus the number of assignments due. Second, I suggest having more opportunities to show students how this course material can be used in future classes. This
course focuses on reading and study skills, so it will apply to every future college course the students take.

Finally, I suggest giving students more opportunity and structure to engage with their peers. In addition, educators should use the virtual tools that make that easier. For example, Moore (2016) discussed the importance of using Google Apps, such as Google Docs, to have students collaborate versus cooperating, or just doing the work they are told. Other similar research has shown the positives of using a collaborative tool, such as Google Drive (Edwards & Baker, 2010; Rowe et al., 2013; Zhou et al., 2012). Therefore, educators should use digital tools, Google Drive as an example, to have students collaborate in a virtual space.

Limitations of Study

While COVID-19 provided the opportunity to study this program virtually, conducting research without physically meeting the participants was difficult. These students were busy, as shown in this study. I was fortunate to have professors’ support, who assisted in promoting the study; however, there was a lack of connection between myself and the participants. Lack of community is a downfall of online learning (Song et al., 2004). Studying a summer bridge program is also tricky because the data collection time is very condensed; the SA program was only five weeks. I was very appreciative to have the support of the professors, and the number of participants reflected their help.

Implications for Future Educational Research

This study was the first of its kind since engagement in developmental education courses has been studied little. There is no research I could find looking at engagement in an online developmental course. The results of this study suggest that such students can and do engage in virtual settings. However, these types of courses are essential for helping them learn the
academic skills, such as study and reading skills, needed for college academic success, as shown in previous research (Wyatt, 1996). I suggest a future study that looks at the potential to improve these academic skills, specifically student study skills, in a virtual summer bridge program.

Additionally, summer bridge programs are very condensed. The RSS 100 course studied here was a five-week course typically taught over fifteen weeks in a regular fall or spring semester. Future research into student requirements, including the number of assignments and work these courses and programs are asking of students, would be an interesting study. The results from this study suggest that students are engaged; however, they are also stretched thin with the amount of work and reading that is due each night through the SA program.

There is funding set aside specifically for developmental education. For example, the ACT 101 program in Pennsylvania provides funding for students from lower-income levels to attend college through these types of programs. Future research into how these programs are specifically helping marginalized groups would be beneficial. Baker (2018) found that the PA ACT 101 program funding and developmental education did help improve students’ academic skills and determination to complete college; however, there is not as much research into studying specific demographics and socioeconomic statuses.

Finally, a study on engagement in hybrid developmental courses or programs would be interesting. Since COVID-19 forced most college courses online (Bustamante, 2020), most students have been exposed to distance education and the advantages that come along with it. Those advantages include flexibility, time saved on commuting, and reviewing course materials at the students’ own pace (Hass & Joseph, 2018). As more students and professors take advantage of online tools, it would be beneficial to know how engagement levels differ for developmental students in different programs or courses, including in-person, online, or hybrid.
Conclusion

I am a beneficiary of developmental education. I believe that experience gave me the foundation to write this dissertation. The SA program sees potential in students, and the developmental summer bridge program that I completed saw potential in me. The participants in this study showed that they perceived and demonstrated high engagement even though this program was virtual due to the COVID-19 pandemic. In general, students have shown resilience through the pandemic, and educators should take the lesson learned to improve distance education in the future. The lessons learned from this study include allowing students to engage with their peers in a virtual setting with structure and clear instructions. While educators’ expectations should be high for students, they should also be aware of the time constraints involved in an accelerated semester. With the results from this study in mind, developmental education can continue to allow students to succeed by engaging with their peers and course material. I am very grateful for the experience developmental education gave me.
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Appendices

Appendix A: Student Study Consent Form

Project Title: [Redacted] Online Student Engagement

Investigator(s): Kaitlyn Crouse-Machcinski; David Backer

Project Overview:

Participation in this research project is voluntary and is being done by Kaitlyn Crouse-Machcinski as part of her Doctoral Dissertation to study the online engagement of specially admitted first-year students, specifically their engagement with course material and their peers in a virtual learning environment. Your participation in this portion of the study will not take any additional time other than your regular class time/homework time. Your participation will allow you to have your voice heard on how you are engaging with the material. The reflection exercise instrument is a class assignment, which you will receive credit for in the class and be able to influence future [Redacted].

The research project is being done by Kaitlyn Crouse-Machcinski as part of her Doctoral Dissertation to study the online engagement of specially admitted first-year students, specifically their engagement with course material and their peers in a virtual learning environment. If you would like to take part, West Chester University requires that you agree and sign this consent form.

You may ask Kaitlyn Crouse-Machcinski any questions to help you understand this study. If you don’t want to be a part of this study, it won’t affect any services from West Chester University. If you choose to be a part of this study, you have the right to change your mind and stop being a part of the study at any time.

1. **What is the purpose of this study?**
   - Study the online engagement of specially admitted first-year students, specifically their engagement with course material and their peers in a virtual learning environment

2. **If you decide to be a part of this study, you will be asked to do the following:**
   - Complete the following online survey: The Online Student Engagement Scale
   - Consent to Classroom Observations
   - Consent for the researchers to view your “Self-Reflection Exercises” assignment from your [Redacted] course and all other class assignments

3. **Are there any experimental medical treatments?**
   - No

4. **Is there any risk to me?**
   - The only risk is a confidentiality breach. The researcher is going to avoid this by using password protected files on secure platforms (e.g. OneDrive). Students
identifiers will be removed and students will be given numbers instead of names for the researcher to analyze the data.

5. **Is there any benefit to me?**
   - Benefits to you may include: Students will have their voices heard on how they are engaging with the material. The reflection exercise instrument is a class assignment, which they will receive credit for in the class and be able to influence future [Redacted] classes at [Redacted].

6. **How will you protect my privacy?**
   - The classroom observation will be recorded (audio-only), and the researcher will take digital notes that will on a password-protected online account. The digital copies of the self-reflection exercises, surveys, and artifacts will have student names and other identifiers removed and be kept on a password-protected online account.
   - Your records will be private. Only Kaitlyn Crouse-Machcinski, Dr. David Backer, and the IRB will have access to your name and responses.
   - Your name will not be used in any reports. Student identifiers (numbers) will be added before any data analysis to ensure confidentiality.
   - Records will be stored:
     - Password Protected File/Computer
   - Records will be destroyed Three Years After Study Completion

7. **Do I get paid to take part in this study?**
   - No, but you will be entered to win a $50 Amazon Gift card (as long as you have the survey has been completed)

8. **Who do I contact in case of research related injury?**
   - For any questions with this study, contact:
     - **Primary Investigator:** Kaitlyn Crouse-Machcinski at 610-436-2402 or kmachcinski@wcupa.edu
     - **Faculty Sponsor:** David Backer at 610-436-2326 or dbacker@wcupa.edu

9. **What will you do with my Identifiable Information?**
   - Your information will not be used or distributed for future research studies.

For any questions about your rights in this research study, contact the ORSP at 610-436-3557.

I, _________________________________ (your name), have read this form and I understand the statements in this form. I know that if I am uncomfortable with this study, I can stop at any time. I know that it is not possible to know all possible risks in a study, and I think that reasonable safety measures have been taken to decrease any risk.

______________________________

Subject/Participant Signature Date:________________

______________________________

Witness Signature Date:________________
Appendix B: Invitations to Participate

Sent 7/18/2022:

Dear [Redacted] Students,

My name is Kaitlyn Crouse-Machcinski and I work as the [Redacted]. I am a previous [redacted] student ([redacted]) and a current doctoral student in the Ed.D. program at WCU. As part of my program, I am studying student online engagement levels in [redacted]students. I am asking for your help as a participant. To participate, you simply need to sign the consent form and complete a quick survey. Once the consent and survey are completed, you'll be entered to win a $50 amazon gift card (drawing in August). The purpose of this study is to gain valuable feedback in measuring student participation levels through observations, your assignments, and your voices, which are all vital to this research.

Please go here to read and complete the consent form and survey (this should only take a few minutes): [redacted]

After that, you are done! I'll take it from there. This study has been approved by the WCU IRB, approval FY2021-184. Please note that all information will remain confidential and no student names or other identifiers will be used in the results of this study (nobody will see your results except myself and my advisor; your professors are not part of this study and will not see the results of the survey). I will not look at the results of the survey until after the summer program ends. If you have any questions or concerns, please reach out! I look forward to working with you the rest of the summer and helping you succeed at [Redacted]. I enjoyed my time in [redacted] and felt it helped prepare me to further my education. Good luck and reach out if you need any assistance in your course.

Sent 7/19/2022:

Hi Students,

I understand yesterday was a testing day, and some students had tech issues. I wanted to make sure you all saw this opportunity to be part of my research study on student engagement for [redacted].

As long as you are 18 or over (of 7/6/21), you can participate. All you need to do is sign a consent form and complete a quick survey (should take around 5-minutes), and you'll be entered to win a $50 Amazon gift card: [redacted].
Hi Students,

I will be coming into some of your classes next week to see how you are participating in your classes as part of my research study. I'll simply be taking some notes; however, I cannot use anything you say/do if you do not consent. (No student names are used in research studies, and no one will know who has or has not decided to participate except for myself and my advisor).

To include you in my research, you need to complete the consent form and survey that went out earlier this week. I would love to get as many students as possible to hear from you on how you engage in [redacted].

I just need about 5-minutes of your time to complete the consent form and quick survey (if you started but did not press submit, your response was not recorded, which is why you are still getting this email).

[redacted]
After you press submit, you'll also be entered to win a $50 Amazon gift card!
Any questions, let me know.
Appendix C: Survey

FINAL Quantitative Instrument Consent Form

Start of Block: Default Question Block

Q10 Are you 18 or older as of July 6, 2021?

☐ Yes (1)

☐ No (2)

Skip To: End of Survey If Are you 18 or older as of July 6, 2021? = No

Q1 First Name

________________________________________________________________________

Q2 Last Name

________________________________________________________________________
Q4 Project Title: [Redacted] Online Student Engagement

Investigator(s): Kaitlyn Crouse-Machcinski; David Backer

Project Overview:

Participation in this research project is voluntary and is being done by Kaitlyn Crouse-Machcinski as part of her Doctoral Dissertation to study the online engagement of specially admitted first-year students, specifically their engagement with course material and their peers in a virtual learning environment. Your participation in this portion of the study will not take any additional time other than your regular class time/homework time. Your participation will allow you to have your voice heard on how you are engaging with the material. The reflection exercise instrument is a class assignment, which you will receive credit for in the class and be able to influence future [Redacted].

The research project is being done by Kaitlyn Crouse-Machcinski as part of her Doctoral Dissertation to study the online engagement of specially admitted first-year students, specifically their engagement with course material and their peers in a virtual learning environment. If you would like to take part, West Chester University requires that you agree and sign this consent form.

You may ask Kaitlyn Crouse-Machcinski any questions to help you understand this study. If you don’t want to be a part of this study, it won’t affect any services from [Redacted]. If you choose
to be a part of this study, you have the right to change your mind and stop being a part of the study at any time.

1. **What is the purpose of this study?**
   - Study the online engagement of specially admitted first-year students, specifically their engagement with course material and their peers in a virtual learning environment.

2. **If you decide to be a part of this study, you will be asked to do the following:**
   - Complete the following online survey: The Online Student Engagement Scale
   - Consent to Classroom Observations
   - Consent for the researchers to view your “Self-Reflection Exercises” assignment from your [Redacted] course and all other class assignments.

3. **Are there any experimental medical treatments?**
   - No.

4. **Is there any risk to me?**
   - The only risk is a confidentiality breach. The researcher is going to avoid this by using password protected files on secure platforms (e.g. OneDrive). Students identifiers will be removed and students will be given numbers instead of names for the researcher to analyze the data.

5. **Is there any benefit to me?**
   - Benefits to you may include: Students will have their voices heard on how they are engaging with the material. The reflection exercise instrument is a class assignment, which they will receive credit for in the class and be able to influence future [Redacted] classes at [Redacted].

6. **How will you protect my privacy?**
   - The classroom observation will be recorded (audio-only), and the researcher will take digital notes that will on a password-protected online account. The digital copies of the self-reflection exercises, surveys, and artifacts will have student names and other identifiers removed and be kept on a password-protected online account.
   - Your records will be private. Only Kaitlyn Crouse-Machcinski, Dr. David Backer, and the IRB will have access to your name and responses.
   - Your name will **not** be used in any reports. Student identifiers (numbers) will be added before any data analysis to ensure confidentiality.
   - Records will be stored:
     - Password Protected File/Computer
     - Records will be destroyed Three Years After Study Completion

7. **Do I get paid to take part in this study?**
   - No, but you will be entered to win a $50 Amazon Gift card (as long as you have the survey has been completed).

8. **Who do I contact in case of research related injury?**
   - For any questions with this study, contact:
     - **Primary Investigator:** Kaitlyn Crouse-Machcinski at 610-436-2402 or kmachcinski@wcupa.edu
     - **Faculty Sponsor:** David Backer at 610-436-2326 or dbacker@wcupa.edu
9. **What will you do with my Identifiable Information?**
   - Your information will not be used or distributed for future research studies.

For any questions about your rights in this research study, contact the ORSP at 610-436-3557.

- I have read this form and I understand the statements in this form. I know that if I am uncomfortable with this study, I can stop at any time. I know that it is not possible to know all possible risks in a study, and I think that reasonable safety measures have been taken to decrease any risk. (1)

Q5 Participant Signature
Q14 **Reminder:** Your professors will NOT see these results. The only people who will see these results are the researchers AFTER the semester is over. Your name will be removed from the results. Within the [redacted] course, how well do the following behaviors, thoughts, and feelings describe you? Please answer using the following scale:
<table>
<thead>
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<th></th>
<th>1. Making sure to study on a regular basis (1)</th>
<th>2. Putting forth effort (2)</th>
<th>3. Staying up on the readings (3)</th>
<th>4. Looking over class notes between getting online to make sure I understand the material (4)</th>
<th>5. Being organized (5)</th>
<th>6. Taking good notes over readings, PowerPoints, or video lectures (6)</th>
<th>7. Listening/readin g carefully (7)</th>
<th>8. Finding ways to make the course material relevant to my life (8)</th>
<th>9. Applying course material to my life (9)</th>
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<td>1</td>
<td>Not at all characteristic of me</td>
<td>Not really characteristic of me</td>
<td>Moderately characteristic of me</td>
<td>Characteristic of me</td>
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<td>10. Finding ways to make the course interesting to me (10)</td>
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<td>11. Really desiring to learn the material (11)</td>
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<td>12. Having fun in online chats, discussions or via email with the instructor or other students (12)</td>
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<td>13. Participating actively in small-group discussion forums (13)</td>
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<td>14. Helping fellow students (14)</td>
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<td>15. Getting a good grade (15)</td>
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<td>16. Doing well on the tests/quizzes (16)</td>
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<td>17. Engaging in conversations online (chat, discussions, email) (17)</td>
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<td>18. Posting in the discussion forum regularly (18)</td>
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<td>19. Getting to know other students in the class (19)</td>
<td></td>
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</tr>
</tbody>
</table>
Q6 Would you like to answer two demographic questions?
(Both questions are optional and can be skipped.)

- Yes (1)
- No (2)

Display This Question:
If Would you like to answer two demographic questions? (Both questions are optional and can be skipp... = Yes

Q9 (Optional): What is your gender?

- Male (1)
- Female (2)
- Non-binary / third gender (3)
- Gender Identity Not Listed (4)
- Prefer Not to Say (5)

Display This Question:
If Would you like to answer two demographic questions? (Both questions are optional and can be skipp... = Yes
Q12 (Optional): What is your ethnicity? Check all that apply.

☐ African-American (1)
☐ Asian (2)
☐ Caucasian (3)
☐ Latino or Hispanic (4)
☐ Native American (5)
☐ Native Hawaiian or Pacific Islander (6)
☐ Other (7)
☐ Prefer Not to Say (8)

End of Block: Default Question Block
Appendix D: Self-Reflection

[Redacted]: Classroom Participation Self-Assessment #1

Name: 
Date: 

Directions: Complete this self-assessment by giving yourself a score and rationale for each score. Each category represents a part of class participation described in the syllabus. Then, answer the questions at the bottom. I will review your self-assessment and complete your grade-based on my observations of your participation.

[Redacted]

Finish the following sentences:
I prepare for this class by …

The way I organize my notes is…

The material I have learned so far will help me in my future classes by …

Answer the following questions:
Describe two ways, using specific examples, that you give to the class community.

Describe two ways, using specific examples, that you have learned from the class community.

[Redacted]
Appendix E: Observation Sheet

<table>
<thead>
<tr>
<th>Observation Category</th>
<th>Detailed Description</th>
<th>Reflective Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation Levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engagement with Professor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engagement with Peers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engagement with Course Materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modes of Participation (e.g. chatbox, talking out load)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Notes & Implications

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
Appendix F: Permission to Use OSE Scale

Kaitlyn Crouse-Machcinski, M.A.
Associate Director
Learning Assistance and Resource Center | The Writing Center
University College | West Chester University of Pennsylvania

Ms. Crousse-Machcinski:

You have my permission to use the Online Student Engagement (OSE) scale. The expectation is you credit the sources you use to access and understand the scale as well as note any changes you make (if any) in the scale.

Good luck with your research,

Marcia D. Dixson

Marcia D. Dixson, PhD
Associate Vice-Chancellor for Teaching and Learning and Professor of Communication
Purdue Fort Wayne
Fort Wayne, IN. 46805
Appendix G: IRB Approval

Jun 7, 2021 12:51:53 PM EDT

To: Kaitlyn Machcinski
Department: Educational Found. & Policy St, University College

Re: Exempt - Initial - IRB-FY2021-184 Online Student Engagement in Developmental Students: A Mixed-Methods Approach

Dear Kaitlyn Machcinski:

Thank you for your submitted application to the WCUPA Institutional Review Board. We have had the opportunity to review your application and have rendered the decision below for Online Student Engagement in Developmental Students: A Mixed-Methods Approach.

Decision: Exempt

Selected Category: Category 1. Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students’ opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

If there are any questions, please don’t hesitate to reach out to irb@wcupa.edu

Sincerely,
WCUPA Institutional Review Board

IORG#: IORG0004242
IRB#: IRB00006030
FWA#: FWA00014155