LOW-INCOME COMMUNITY COLLEGE STUDENT PERCEPTIONS OF FACULTY INTERACTION IN ONLINE COURSES

by

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ABSTRACT

CAROLYN VINAL SALANGER. Low-Income Community College Student Perceptions of Faculty Interaction in Online Courses. (Under the direction of DR. LISA R. MERRIWEATHER)

The purpose of this survey design research study was to understand student perceptions of online interactions with instructors in online courses in the spring, 2020 and determine if any differences exist in perceptions presented when taking into account Pell-eligibility. This study took place at a medium-sized community college within the North Carolina Community College System. Data was obtained through an online survey. The chi square test and logistic regression were used to analyze the quantitative data. This study revealed that students in this particular term were favorable when it came to online interactions and contrary to my hypothesis, I found that a student's perceptions were not significantly influenced by their Pell status; which can be interpreted that the experiences were not vastly different for lower-income students. Qualitative analysis of open-ended survey questions found three significant themes with regard to their perceptions of the differences they experienced in online versus face-to-face interactions: response time, “seeing” and “hearing” the instructor, and instructor attributes. Implications for practice and recommendations are offered.

Keywords: community college, Pell-eligibility, online instruction, faculty-student interactions

DEDICATION

First and foremost, I would like to thank my Lord and Savior, Jesus Christ for the ability, endurance, and persistence bestowed on me to finish what has been the most challenging educational self-improvement I ever encountered. Next, I would like to thank my husband and children for supporting my several year project. Watching me behind the computer and allowing me to be away from the family while in class without pressure or stress will always be appreciated. I would not have finished without your constant encouragement and support. Michael, you are my best friend and I love you. Finally, I want to thank my parents. Thank you for bringing me up in a loving, Christian, and supportive home where we were taught to love thy neighbor. Without you both I would not have been able to accomplish this. 2020 has been the most difficult year for many reasons and I hope that better is to come. I admire you both so much.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1: INTRODUCTION

Put bluntly, class trumps ability when it comes to college graduation

(Dynarski, 2017)

The world needs the talents and achievements of all citizens to solve its biggest problems. If we do not address social justice in higher education, then we all lose (Adams et al., 2007). Education attainment continues to have the potential to redress issues of social injustice by giving those at the bottom of the socioeconomic scale the ability to climb out of poverty. Even though the world is changing, Americans still consider a postsecondary education one of the best ways to increase their chances for economic mobility. Low-income students, however, often struggle to participate fully in the benefits that a college education can provide due to the barriers they face. Students from low socioeconomic levels struggle to gain access to college and complete their degree. The culprit is often cost, but they also face many additional challenges and barriers, such as preparedness, multiple conflicting demands on their time, lack of support at home, and lack of resources (i.e.; transportation and childcare).

This struggle has consequences. For instance, during the 1980s, U.S. companies demanded more education for employees in order to keep up with the new and changing skills needed to compete in the marketplace. Obtaining this needed education proved to be problematic for lower income workers as the experienced less success in attaining a degree. To fill the void in the marketplace, colleges set out to be more successful in matriculating students into college and through degree completion, especially those from low-income communities. Historically, community colleges have provided access to higher education for a greater range of people from diverse economic, social, racial, and academic backgrounds. Around 1920, U. S. community colleges enrolled an estimated

10,000 students, but by the 1980s, this number climbed to over 4,000,000. Today enrollment has increased to over 8,500,000 (Cohen et al., 2014). Community college education exploded in popularity.

Community colleges offer open enrollment that caters to high-risk students such as students who have been marginalized in society. These groups include minorities, low socioeconomic status (SES) students, immigrants, disabled students, and low-income students. Community colleges have been particularly effective in providing access to low-income students, especially in comparison to 4-year universities (St. Amour, 2019). According to the North Carolina Community College (2019), 44% of low-income students (those with a family income of less than $25,000 per year) attend community colleges as their first college experience after high school, as opposed to only 15% of high-income students (NCCC, 2019). Community colleges' low cost and open access model allow some students, who thought a higher education degree was out of reach, the opportunity to attain the college degree needed to lift them out of poverty. Further, open access at community colleges is attractive to those who must balance work and family commitments.

Today open access community college education has re-energized the hope that the gap between the wealthy and poor could be closed, and those at the bottom would have a new pathway to a sustainable income. Community colleges are considered by some as "Democracy's Colleges" because of their mission to educate those who traditionally are not served well at a residential 4-year university (Hytten & Bettez, 2011) and those who are a particularly vulnerable segment of students in the United States.

Problem Statement

Even in the community college environment, students are still at risk. Despite aggressive growth in access to higher education after World War I, the success of community colleges, and efforts of numerous programs and services that claim to directly aid low-income college students, those at low socio-economic levels were still at risk of not graduating at levels equal to students from higher income levels (Furlong & Cartmel, 2009). This demographic continues to lag behind in the rate of degree completion and time to completion (Colson, 2017). Finding options that work for the low-income student population is critically important for community colleges given that they enroll a large share of low-income students.

Community colleges strived to develop alternative strategies and technologies to meet students' needs. The creation of learning from a distance emerged as a more flexible option and online learning became one of the most universally employed technologies for adult student education (Colson, 2017). Because many low-income students commonly juggle college against work and family obligations and benefit from flexibility, online learning at community colleges inherently serves this population.

Online education with its flexible digital format is seen as a solution to mitigating some of the barriers that students from low socio-economic families encountered, providing hope for equal educational outcomes (Becerra, 2010; Clarke, 2017; Evans et al., 2017; Furlong & Cartmel, 2009; Spriggs, 2018). Many community colleges were early adopters of this format. Parsad and Lewis (2008) found that, in 2007, 97% of 2-year colleges offered online courses compared to only 66% of all postsecondary institutions. In 2010, about one-third of all college students were enrolled in online courses, however, it was unknown whether students were

succeeding. Since then, research regarding the internet's impact proliferated (Parsad & Lewis, 2008)

Friedman (2007) contended that "the world is flat," (p. 5) which means that information is becoming more accessible to all people and competition is leveling. Online learning contributes to this. The problem that still exists is even with the internet and its power to deliver information to everyone, there are still barriers to accessing an online college education and learning online. At many colleges, there is a mismatch of school policies to the reality of low-income students' lives that prevent the internet from becoming an equalizer (Black et al., 2019). In the western civilization, assumptions and beliefs work against a low-income student's experience and success in college exist regarding a student's understanding of how to be a successful online student, their ability to access the internet, their prowess using the internet as well as their ability to obtain high school prerequisite courses needed to enroll in higher-level online courses in college.

The outcomes of low-income students are a measure of equity and social justice to which community colleges must pay attention. Thea Renda Abu El-Haj (2012) argued that all students deserved high-quality educators and a rigorous curriculum (equal standards). She went on to argue, "simple-minded policies and practices undertaken often produce highly inequitable outcomes" (p. xii). When focusing on outcomes, educators are forced to build supports that promote success for all students (Abu El-Haj, 2012).

Equity issues emerge when looking at race, class, academic under preparedness, and higher education stratification in a community college (Clarke, 2017; Colleges, 2012; Evans et al., 2017; Spriggs, 2018). There is also an obligation to ensure that online courses do not have a negative impact on students (Levin, 2007). One such initiative that attempted to address this

concern came from the Lumina Foundation and the Center for Urban Education which created a framework in 2015, framing inequity as a "problem of practice" rather than a "problem with students" (Malcom-Piqueux & Bensimon, 2017, p. 2). We have to address issues of inequity in our practice in order to close completion gaps.

An effective method for uncovering hidden barriers to equal standards such as inadequate supports, instructors, and curriculum is to name them. In order to advance justice and equity for community college students, it is important to identify and name the systems in place that continue to create and exacerbate the conditions that impact how people with low-incomes exist. Furthermore, naming allows us to directly address the systems that continue to oppress. By doing this we no longer talk about the issues in an abstract manner, but address them concretely. One system that must be named is online learning.

In a contemptuous 2019 report, Protopsaltis and Baum argued that low-income Pell grant recipients, and those with weaker educational backgrounds tend to do much worse in online courses. While this report mainly targeted for-profit institutions, improvements in graduation or completion results are required everywhere that students were taking online courses. Protopsaltis and Baum (2019) argued that well-meaning educators have unintentionally offered online courses that "run on their own," which negatively impacts the quality of faculty-student online interactions especially at resource-strapped institutions. Poor quality in faculty-student interactions leads to frustration, isolation, and poor performance.

Purpose of the Study

The purpose of this study was to explore how perceptions of faculty interaction are related to socioeconomic status and low-income student success of community college students in online courses at an urban community college in the southeast.

Research Questions

1. How do community college students perceive the frequency and meaningfulness of interactions with faculty in online courses, and do those perceptions vary based on Pell eligibility?
2. What is the relationship between perceptions of interaction with faculty (frequency and meaningfulness) and course grades, taking into account Pell eligibility?
3. To what extent do students perceive the interaction with faculty in online courses to be similar in quality and frequency to those interactions in face-to-face courses?

Significance of the Study

The innovation of online education afforded students, who could not participate in a traditional on-campus residential postsecondary education, the opportunity to earn a degree. Low-income students in the United States are particularly attracted to this delivery of education so it deserves continual investigations into how educators can make improvements to its ability to be a catalyst for successful outcomes. As the importance of a more educated society continues to be a topic of national concern, adult degree completion will remain paramount to the success of the United States. Community colleges play a significant role in supporting 21st-century learners seeking college degrees. At the same time, it is clear that Americans will no longer be satisfied with paying for online courses and education that do not measure up.

As educators, it is our job to create an environment that will engage students as well as positively affect retention, learning, and completion. This study contributes to the understanding of faculty-student interactions in online courses; greater understanding can lead to the creation of practices to advance actual completion rates and push beyond just a vision of equitable outcomes for all.

Knowing there is a significant number of low-income students in the community college environment, it is the responsibility of college administrators to understand the challenges of this large demographic of community college students in order for new and better support to be created. This study has the potential to positively influence the retention and completion rates of students from a low socio-economic background. Furthermore, it contributes to the creation of targeted and effective design of distance education instruction policies and supports that address the needs and success of all students at community colleges. Identifying the faculty interactions that help enhance student success and documenting the strengths, contributions, and challenges of online students provide the direction on how to prepare faculty, full-time, part-time, and adjunct, to design and facilitate meaningful interaction. The findings of this study can be used by college administrators, faculty, and staff to serve and support students enrolled in online courses through the academic process and to improve faculty preparation for those who instruct online. The findings can also help raise awareness of the unique needs of online students who attend community colleges.

As community college enrollment continues to increase, there will be an even greater need to examine how we teach online students, particularly low-income students. Currently, there is a lack of empirical quantitative research exploring online community college students' perceptions of the influence of faculty interactions on student success This study will expand the literature base by examining these interactions from the perspective of low-income students in an online community college context. Findings of this study can be used to a) improve the interactions in online course delivery in order to improve the chances for more equitable outcomes for students; b) inform future policy and practice for this particular population; c) lead to a better understanding of the community college online learning system; d) impact retention in

online courses and degree completion rates; e) improve interactions in online course delivery; f) improve the chances for more equitable outcomes for online students; and g) encourage future innovation in higher education.

Conceptual Framework

A critical framework is used to acknowledge the systemic oppression of low-income Americans. For this study, I employ Social Justice Theory (Rawls, 1971), Transactional Distance Theory (Moore, 1993), and Justice Claims (Abu El-Haj, 2012) to form a framework to examine the online interactions of faculty and students, with an eye on low-income students taking online courses while pursuing their college degree. A social justice framework pushes the idea that educators and administrators must embrace the belief that all students have the ability to succeed (Rawls, 1971). To improve online education, teaching practices must reflect high expectations for students while making a space for individual voices to be heard, connecting with each individual by fostering a caring relationship, and providing an equitable learning experience for those who frequently need online education the most.

Social distance is a key factor in the struggle to succeed in an online environment. Transactional distance theory (Moore, 1993) states that the psychological and educational distance between learner and teacher are the most detrimental to a student's ability to succeed. It is a pedagogical issue, not a geographic issue. Transactional distance theory is the primary guiding theory for this study.

"Justice Claims" is the final piece to this framework. Abu El-haj (2006) names equal standards as a must for equity. Ensuring that all students receive the same excellent program requires ensuring equity in educational outcomes.

Methodology

A study using a survey as its method to gather data was used in this study. Quantitative and qualitative analysis were used to garner and interpret results. Students enrolled in online classes at a North Carolina community college voluntarily completed an electronic survey. The survey provided information to determine how they perceive the regular and substantive nature of faculty interactions in their online classes.

Definitions

1. Frequent refers to contact that happens on a regular basis and works toward mitigating a sense of isolation on behalf of the student (Poulin & Davis, 2016)
2. Meaningfulness refers to interactions that are relevant and substantive to learning (Poulin & Davis, 2016)
3. Gateway Courses refers to prerequisite courses at MSCC needed in order to enter an upper level course.

Limitations

In conducting this study, I identified several possible limitations. A significant and surprising limitation that presented itself in the middle of the Spring 2020 semester was the emergence of the Covid-19 virus. In February 2020, Covid-19 spread throughout the world and in the United States resulting in, colleges and universities moving their courses online and closing in-person and on-campus meetings. In this case, many face-to-face courses were quickly converted to online delivery and all students were then required to meet online. As a result of Covid-19, the impact of requiring instructors and students to meet online when there was no original plan to do so is undetermined. Previous online experience and a desire to learn and teach online are new factors that were not controllable. Additionally, because this study only involved

one medium-sized city community college in North Carolina, the results are not generalizable to other states and/or higher education sectors. Furthermore, the generalizability of this is also limited due to the relatively small response rate. Finally, the academic year 2019/2020 may or may not be completely representative of a typical or normal year for the selected population due to Covid-19.

The demographic data is self-reported, hence, the data set could contain inaccuracies. Factors not explored in the study may have had an effect on student success because in addition to an analysis of the letter grade that a student earned, there are other markers of success.

Delimitations

Survey participants were delimited to individuals enrolled during one semester of study at a community college in North Carolina; therefore, inferences from this study consider characteristics common to these students. I selected the participating community college based on convenience and its high online enrollment of 4,400 unduplicated Full Time Equivalent (FTE) students in the Fall 2019 semester.

Assumptions

I recognize the following assumptions of this study:

1. This study operates under the assumption that the participating students read and comprehend the survey questions.
2. This study operates under the assumption that the students completing the survey answer the questions honestly.
3. This study operates under the assumption that the students completing the survey are students enrolled in online classes as well as one face-to-face class.

4. This study operates under the assumption that the Institutional Research Department of the community college will accurately extract the data from the survey.

Summary

Schools are tasked with educating students from some of our most economically disadvantaged communities, and this issue is worthy of closer examination because of its impact on social mobility. Studies (Beatty-Guenter, 2003; Colson, 2017; Gregory & Lampley, 2016; Hawkins, 2012; Jaggars, 2011, 2014; Shea et al., 2018; Xu & Jaggars, 2011) to date have suggested that online learning's ability to deliver equitable outcomes, especially for community college students, remains questionable.

Findings of this study can be used to improve the interactions in online course delivery in order to improve the chances for more equitable outcomes for students. A postsecondary education can have a profound impact on one's future earning potential, which is transformational for those who have lived their entire life in a low-income existence. Although much of the research regarding online education is focused on faculty presence and interactions in an online environment, few studies have deeply analyzed student perceptions of the frequency and substantive nature of the interactions. Because the demographics of students who are attracted to a community college education side heavily on those who qualify for a Federal Pell grant, the focus of this study investigates whether there is a difference in their perceptions as compared to those who are not Pell grant recipients. This study is organized as follows: a) literature review covering low-income community college students, online course effectiveness and faculty interactions as well as an overview of the theories that guide the study, b) survey research design methodology c) presentation of the findings of the study, and d) discussion of the findings.

CHAPTER 2: LITERATURE REVIEW

The purpose of this study was to explore how the perceptions of faculty interactions are related to socioeconomic status and student success among students enrolled in online courses at an urban community college located in the southeast. As this study examined the experiences of community college students, pursuing a college degree and taking some of their classes online, it was critical that the study sought an understanding of:

1. How do community college students perceive the frequency and meaningfulness of interactions with faculty in online courses, and do those perceptions vary based on Pell eligibility?
2. What is the relationship between perceptions of interaction with faculty (frequency and meaningfulness) and course grades, taking into account Pell eligibility?
3. To what extent do students perceive the interaction with faculty in online courses to be similar in quality and frequency to those interactions in face-to-face courses?

This chapter presents the conceptual framework, examines the historical and current issues related to low-income student outcomes, and how online education and the faculty interactions within those courses influence the outcomes. Lastly, the literature includes empirical studies on the factors associated with online course retention.

Conceptual Framework

Social Justice Theory

In the later 20th century, social justice activism in the United States of America became a means for the ongoing work of eliminating the pervasive oppression that marginalized groups have experienced throughout our history. In 1973, John Rawls, a well-known Harvard philosopher, published his influential book, “A Theory of Justice” that modernized some of the

earliest theories promoting the tenets of social justice and the belief that all humans deserve dignity and equal rights. Specifically, Rawls (1971) was concerned with the many ways in which attributes that have no moral worth like class, race, and sex will often disparage people's prospects in life (Nussbaum, 2001).

Equality, one of the social justice tenets, contends all people have rights; therefore, justice requires equality in the treatment of all people. In order to be fair, justice favors the more at-risk and marginalized members of society and equity means that all students should have the right to the resources and help they need to succeed (Skytt & Turville, 2012).

Most everyone agrees that distance education and more recently online education has extended postsecondary education access to those who have previously struggled to participate because they could not make it to a traditional college setting. This access, in turn, makes education more just. Traditionally, community colleges have been hailed as democratic institutions that are responsible for promoting social equality in the United States. Therefore, the marriage of community colleges and social equality seems to be the perfect answer to a successful college experience.

In her book chapter, "Theoretical Foundations for Social Justice Education*,"* Bell (2007) stated that in social justice education the goal is "full and equal participation of all groups in a society that is mutually shaped to meet their needs" (p. 1). She further hypothesized that the pervasive and restrictive nature of oppression in the United States has led to neighborhoods of concentrated poverty. Fighting for social justice must include "a distribution of resources that is equitable and all members are physically and psychologically safe and secure" (p.1). She further explained that developing a socially just society that is "heavily steeped in oppression) (p.2) is difficult work.

Concrete equitable solutions need to be developed and practiced for students to participate in an education that prepares them for a sustainable living. While there are few equitable and feasible solutions to the well-established and well-publicized issue of faculty interaction and online course attrition, to change the outcomes for those in the margins, systems need to change. Change can only occur once those in power understand that ongoing systems (like online programs and courses) mediated by well-intentioned people are usually unconsciously acting as agents of oppression by merely going about their daily lives (Bell, 2016).

Another tenet of social justice is that all people have the "right to learn". In this country, learning online has become a critical mode of delivery. It is especially relevant for those who seek flexibility in their busy lives. Low-income students, in particular, need to fit learning into their schedule when the time permits. Due to the flexibility it offers to those with overwhelming commitments and time restrictions, many vulnerable students respond to the promise of equity in community college online learning. This study considered the outcomes of online education and furthered the inquiry into its effectiveness with a discussion of its ability to offer a college education that will provide those who can earn one a job with financial stability. It is time to work harder to increase the odds of success.

For those who are most vulnerable, a fair or just learning experience online is one that must operate with the same level of presence and interaction from faculty within a face-to-face course. Online courses cannot run on their own and be effective. Educational leaders must insist that students, especially those who are vulnerable, and those students who are pushed to the margins to be a part of an online learning environment where faculty practice high-quality interactions.

In the next section, the conversation for why equal standards as a justice claim is important begins the discussion of why there is a need for equity in online learning. Social Contract theory and Transactional Distance theory will round out the argument that for better outcomes for low-income students there must be a reduction in the social distance between the instructor and student. When that is mastered, we shall surely see all college students succeed at higher levels.

Equal Standards as a Justice Claim

Abu El-Haj's (2012) term 'justice claims' is the concept on which advancing equal standards for low-income students rests. Abu El-Haj used "justice claims" to debate the idea of how schools espouse equal standards in education. In the U.S. higher education system, we revere the idea of equitable access and opportunity. Abu El-Haj explained that educators should interrupt the inequality of education outcomes by ensuring that all students receive the same excellent program. Furthermore, looking at student outcomes offers an important measure of equity (Abu El-Haj, 2012).

Abu El-haj (2012) argued that educational institutions committed to equity should acknowledge and address issues associated with difference. A critical element of justice claims is that schools must pay attention to all students' outcomes as a measure of equity. It is not enough to claim that all students have access to, or have been exposed to, the same online course. Educators must build a culture that supports including substantive and frequent interactions so students can *meet* those equal standards.

Through studying equal standards, it is evident that holding all students to the same standards leads to the recognition that students come with differences, which need different supports for equal outcomes. Is it fair to expect all students to be assessed by equal standards for

proficiency, given that they started with different knowledge skills and experiences? Being an equal member of the classroom requires that faculty focus on the students' differences and recognize that their exclusionary practices follow from setting up the classroom without a low-income student in mind. Abu El-Haj's (2012) concept of equity is applicable as it relates to quality programming in that she argued for the disruption of inequality of educational outcomes by ensuring that all students receive quality programs. For an institution to be certain that online course quality is consistent with classroom teaching, online courses must be evaluated and low-income student outcomes must be part of the evaluation.

Social Contract Theory

The Social Contract Theory is an ancient model that existed in the eighteenth century during the Age of Enlightenment and is the idea that individuals agree to surrender some of their freedoms to authority in exchange for the protection of social order. Rawl's (1971) more modernized approach on the Social Contract Theory proposes that a just society is one where practices are fair if they espouse to promote the well-being of all and a just and equal society must be ones that are just for all who participate in it.

Levin (2007) famously applied several of Rawls's (1971) theories of justice to community colleges. He suggests that over decades, institutions have been distracted by economic competition and the pledge to low-income success became subordinate. There are key practices that Levin (2007) points to that allow community colleges the ability to improve the success of its students. In accordance with his two main principles of justice as fairness and equality of opportunity, Rawls (1971) stated "In order to treat all persons equally, to provide genuine equality of opportunity, society must give more attention to those with few native assets and those born into less favorable social positions" (p. 46). Levin (2007) also used this definition

to determine the extent to which community college students are, with regard to online courses, afforded justice. Levin (2007) used John Rawls's (1971) principles of fairness to relate the concept of a social contract to a community college education. He suggests that colleges must advantage the disadvantaged. This is an "act of justice and an achievement for a college" (Levin, 2007. p. 199).

For some, an online education does not provide the promised equal educational outcomes and a path to upward mobility. Levin (2007) in his book chapter, "Theoretical Frameworks," wrote that if justice is defined as "creating conditions or outcomes of equality then the community college falls short" (Levin, 2007). He went on to highlight that community colleges must create efficiencies in order to compete for students and resources. Often, as with any business model, colleges make decisions that benefit themselves and not always the student (Furlong & Cartmel, 2009).

Moreover, Levin (2007) used Rawls's (1971) principle of fairness to contend that each person should have an equal right to all basic liberties including an educational experience. In this example, we can substitute online learners at community colleges for "each person." Hence, low-income students should be treated fairly in the complex higher education system. The social contract debate provides the framework to question the extent to which the mission of a community college is met by providing an online education and guaranteeing the opportunity for upward mobility.

The diversity of students, who come to community college, pose great challenges in planning and implementing assignments and interactions to meet the needs of each student. It is imperative that we are student-centered and employ a variety of teaching strategies. Levin (2007) also embraced Rawls's (1971) social contract argument that posits that members of society are

guaranteed a future from one generation to the next. Through this lens, he examined society's treatment of not only individuals, but also groups and classes. Levin (2007) discussed community colleges and the extent to which the community college and its mission and actions provide justice for students. This approach can be applied to the basis of my research questions. It also leads to the question: are community colleges adequately supporting low-income students while educating them so they are prepared for a great job with a sustainable income? Low-income students may be unaware of the skills and attributes needed to become a successful student online so as not to become isolated or frustrated. To further high-quality education for students who are marginalized, research is needed on the perceptions and experiences of these students during their participation in programs or coursework at community colleges. This study considered the promise of online education as the great equalizer and questioned the possibility that it has broken the contract with low-income community college students and is not producing equitable outcomes.

Theory of Transactional Distance

With advancements and growth in online education, Michael G. Moore's (1984) transactional distance theory emerged and gained notoriety in the online learning environment (Schneider, n.d.). Moore and Kearsley (2006) theorized that the physical separations between instructors and learners "lead to communication gaps, a psychological space of potential misunderstandings between the behaviors of instructors and those of the learners" (p. 200). In his seminal work, Moore (1984) described the distance in education as a distance between learner and teacher, which is not just geographic, but also educational and psychological. "It is a distance in the relationship of the two partners in the educational enterprise. It is a transactional distance" (Moore, 1989 p. 155).

The transactional distance theory identified dialogue, structure and learner autonomy as the key constructs of the transactional distance. According to Moore (1993), the amount of dialogue and the rigidity of the structure determine the degree of transactional distance between learners and teachers. Dialogue refers to interaction between teacher and students and among students. Structure is "the rigidity or flexibility of the program's educational objectives, teaching strategies, and evaluation methods" (Moore, 1993, p. 26). Structure has also been defined as 'responsiveness' of programs to an individual learner's needs (Moore & Kearsley, 1996).

The third construct of transactional distance is learner autonomy. Moore (1990) defined learner autonomy as "the extent to which in a program the learner determines objectives, implementation procedures, and resources and evaluation" (p.13). Learner autonomy can be viewed as similar to a student being enrolled in an independent study. A student who enrolls in independent study enters into a structure where the student is in charge of their study.
The relationship among structure, dialogue and transactional distance is that the higher the structure is and the lower the dialogue is, the more remote transactional distance exists (Moore, 1993). The more the learner is autonomous, the more a course looks like a Correspondence course or independent study. The relationship between transactional distance and learner autonomy exists when remote transactional distance happens, the more autonomy the learner has to exercise.

Transactional distance is essentially the degree to which an instructor engages students in their education and learning. Bender (2003) stated that the role of the instructor is critical to effective learning. Bender (2003) also went on to say that transactional distance can occur in face-to-face classrooms as well when students surf the internet, do online shopping and scroll through Facebook, which creates a disengaged student from the learning process. The two

absolutely necessary components for successful online learning are: (1) teacher engagement, and (2) student participation. If a student disengages throughout the course, the transactional distance becomes too great. This will cause the student to be frustrated and at a higher chance of non-completion. When an instructor motivates students into active learning, the transactional distance shrinks and the student can learn from the faculty (Bender, 2003).

Moore (1993) stated that there is an inverse relationship that exists between these three constructs, dialogue, structure and learner autonomy; an increase in one can lead to corresponding decreases in others. The more autonomy the learner experiences (Goel et al., 2012), the less dialogue exists in the course, which increases learners' perception of transactional distance.

Online instructors must keep students actively involved and connected to the class through effective communication to reduce this transactional distance. When students do not receive proper and necessary communication, they feel isolated and less motivated, thereby increasing the transactional distance. Effective communication strengthens the instructor-student relationship, allowing students to become active learners and affording them a sense of belonging.

A Distance Education Historical Perspective

A key reason for the emergence of distance education was to extend the traditional university and its history of exclusion. With the introduction of learning apart from the instructor, education became available to a greater number of students, representing more diverse backgrounds. It provides the opportunity to individuals who want to learn but cannot be in the same location as their instructor. This new delivery of education was divergent to what was happening throughout the majority of history; education was only face-to-face and only for the

privileged few. For non-traditional students who wanted to learn, the poor, older, working and those with vast responsibilities, a traditional campus-based education was not possible. Distance education also dealt with the problem of university expansion for institutions with no space on-campus to do so.

Correspondence Education

Correspondence education was the first example of distance education that helped to close the gap. SACSCOC (2012) defines correspondence education as the institution providing instructional materials, by mail or electronic transmission, including examinations on the materials, to students who are separated from the instructor. Interaction between the instructor and the student is limited, is not regular and substantive, and is primarily initiated by the student; courses are typically self-paced. Correspondence study has a long history and has been used over time to teach a variety of subjects at various levels of education. The onset of correspondence education is significant because in the 19th century, only the privileged were invited to study at universities. Correspondence study opened higher education to a wider audience. In the first well-known example of correspondence education, Sir Issac Pitman, the English inventor of shorthand made an invention in 1840 that became disruptive to the traditional model of face-to-face education. He started delivering instruction by mail to a potentially limitless audience (Matthews, 1999). Within a few decades, many correspondence programs were in existence and its place as the first example of distance education had been solidified.

The Western Interstate Commission for Higher Education (WICHE) founded the Cooperative for Educational Technologies (WCET) and is a leader in the practice, policy, and advocacy of technology-enhanced learning in higher education (WCET, 2019). WCET (2019) reported that before correspondence education became eligible for federal financial aid, it was

known for the type of interactions with faculty. The interactions were based on when the student had time to interact with the faculty; there were no regularly scheduled interactions. Correspondence students proceed at their own pace and return assignments when they complete them. In this model, the flow of the course is guided by the student.

In the historical anthology of correspondence school education, *The Foundations of American Distance Education*, Watkins and Wright (1991) described another early example of the correspondence model. In 1856, Charles Toussaint and Gustav Langenscheidt formed a school in Berlin that taught languages by correspondence to individuals living in the United States. Later in 1877, Illinois Wesleyan University designed a set of correspondence courses out of an "urgent and legitimate need" to educate adults "whose professional duties or financial situations prohibited attendance at a regular college" (p.5).

Up to the year 1890, there was rapid economic growth in America but the average American had not been educated beyond the fifth grade. Efforts became urgent to build an educational system that would teach citizens skills and tools for success in the marketplace and provide income to support a family. In 1892, the University of Chicago started offering learning through a "correspondence school" educational model in an attempt to reach more people. Correspondence education continued to spread throughout the United States and several entrepreneurial educators sought to offer adults the opportunity to study at home. Anna Ticknor, a leader in the movement, created the Society to Encourage Studies at Home, which offered educational opportunities to women of all classes (Watkins & Wright, 1991). This school was hugely popular for decades. As more and more correspondence schools came into existence and used federal financial aid as their business model for making money, abuse and fraud became an issue. As a result of mailing course materials off to students while offering little interaction with

a knowledge expert, students essentially taught themselves and found themselves failing or becoming frustrated and dropping out.

Soon after the personal computer was invented in the late 1970s and the internet in the late 1980s, online education became ripe for offering a richer educational experience for students. The internet promised a way for instructors to easily support students at a distance that closely matched what was happening in a face-to-face classroom.

Online Learning

With the creation of the internet came innovation in education and the hope for better personal connections without physical presence. The internet was once considered to be one of the ways in which there would be a "flattening" of the world. (Friedman, 2007) as it brought hope that everyone, regardless of privilege, would have access to the same information and a "leveling of the playing field". Just as correspondence education did, the internet brought educational courses and programs to more people and the ability to earn the same high-quality college education and credential regardless of their ability to live on campus. When the internet became mainstream in the mid to late 1990s, the popular literature started to notice online education and its impact on higher education (Friedman, 2007) but distance education has always been the target for some critics and still takes a back seat to the traditional face-to-face lecture format.

Much like correspondence mail-based programs, distance education that used the computer and the internet has long been criticized for lack of personal connection and interaction. Ironically, other technologies including writing, faced the same critique. Plato criticized writing, warning that writing would weaken one's memory (Baron, 2009). Other technologies through time such as the pencil, chalk, the chalkboard, and typewriters also faced

criticism. All were thought to weaken the interactions between learner and teacher. Throughout history, technology such as the television, film, and telephone have enhanced learning in the classroom. According to Baron (2009) “They too should not and will not replace the teacher” (p. 243).

In 1944, when Congress created the postwar GI Bill, correspondence model schools became eligible for financial aid programs under Title IV of the Higher Education Act this exploded enrollment in correspondence model educational programs (Hegji 2015). The industry expanded rapidly in the late 1970s and 1980s after savvy businessmen and businesswomen created hundreds of new for-profit schools and programs, enrolling aid-eligible students, many of them focusing on low-income inner-city areas. By the late 1980s, proprietary school students received 25% of all Pell Grant funds. Between 1990 and 2006, the for-profit industry looked promising for online education because of the flexibility it offered students (Surowiecki, 2015). What happened next though was eye-opening.

Financial aid abuse and unreasonably high loan default rates in the trade school sector, attracted publicity and pressured lawmakers to enact a series of legislative and regulatory remedies, leading to a cut-off of the federal financial aid schemes that some schools relied on to make their profits. Further, regulators began cracking down on misleading job placement claims and are now questioning the quality of online programs everywhere, even in the not-for-profit education sector (Protopsaltis & Baum, 2019).

There are various examples of schools who have been under scrutiny for poor outcomes. For instance, at American National University, 71% of the alumni had not paid back any of their loan money, even after being out of school for five years. In addition, a 2010 undercover government inquiry of fifteen for-profit colleges found that all of them "made deceptive or

otherwise questionable statements." One even told an applicant that barbers could earn up to two hundred and fifty thousand dollars a year. Schools also increased tuition to cheat the system (Surowiecki, 2015). For many for-profit institutions, the lack of quality accreditation, horrible completion rates and the destitute job prospects left the for-profit industry's reputation as dishonest and disrespected among prospective students, the public and the federal government.

In 1992, Congress enacted a federal financial aid rule that said a school could not receive federal financial aid if it offered more than 50 percent of its courses by correspondence or enrolled 50 percent or more of its students in online courses. This was referred to as the "50-percent rule." In 2006, due to pressure from lobbyists, colleges were no longer required to deliver at least 50% of their courses on-campus in order to qualify for federal financial aid (Dillon, 2006).

With this new path to financial aid online programs were allowed "unrestricted access to student aid, but required them "to support regular and substantive interaction between the students and the instructor, synchronously or asynchronously" (Protopsaltis & Baum, 2019, p. 2). In 2014, the Department of Education further clarified this by saying that student-faculty interaction cannot be "wholly optional or initiated primarily by the student" (Protopsaltis & Baum, 2019, p. 25). In many cases and in the case of students who are at-risk of completing a post-secondary credential, it is unreasonable to expect a student to seek out the help that they need from their faculty when often the student may already struggle with feelings of inferiority. A faculty member is the knowledge authority in the relationship and can play a significant role in improving a student's academics and confidence in schooling.

When the internet created online learning, it opened up education for those living at the bottom of the socioeconomic ladder all over the world. Massively Open Online Courses

(MOOCs) is another example of the furthering of access to education that has never been seen before. The hope is that impoverished communities can learn things through a MOOC that will allow them to innovate or create a business and experience prosperity. However, with all these advancements in access and technology we still have not increased success rates of low-income community college students.

In more recent years, online education has garnered comments regarding its similarities (Heerema & Rogers, 2001; Poulin, 2016) to the correspondence education that was popular decades ago. Despite innovations to connect people online, the lack of interaction in some online courses and online education has created this unfortunate comparison. Critics (Jaggars & Xu, 2010; Kaupp, 2012; Tallent-Runnels et al., 2006) of postsecondary online education who are concerned with the quality and effectiveness particularly for low-income and at-risk students have noted this lack of interaction and relationship-building.

The community college has had a steady rise in online enrollment. Decades of research on persistence and success in community college found that online persistence has an impact on subsequent course enrollment. Jaggars (2011) suggested that studies conducted in the community college setting continue to propose that students are more likely to withdraw from online courses, even after controlling for a variety of student characteristics. She also summarized that the general pattern of results for community college students (the majority of whom are low-income and underprepared) is not promising. After decades of experimenting with ways in which technology would further the participation in college education, what has been proven is that there are many ways in which entrepreneurial-minded individuals can make a living; unfortunately, what has not improved is the potential of this delivery to lift Americans into the middle class.

Online Learners

For some students with the common "at-risk" characteristics, earning a college degree online can be a highly desirable option because of the flexibility it offers. The literature is packed with studies investigating the characteristics of those who enroll in online courses. In data taken from Noel-Levitz's National Online Learners Priorities Report (2012), the majority of online learners in the United States fell into the following eight categories, Caucasian females, enrolled full-time, employed full-time, undergraduates, married, homeowners, plan to complete their degree online, and new to online programs.

A student's personality traits and their perceptions of online courses is the subject of Baker and Moyer (2019) study where they found that students with higher levels of conscientiousness, motivation, and social presence influence their satisfaction with online learning. Artino & Stephens (2009), in a study evaluating online versus face-to-face sections of the same course found that graduate students enrolled in a Special Education course reported using higher critical thinking skills and had lower levels of procrastination of tasks for online coursework, whereas undergraduates were more likely to procrastinate but preferred enrolling in online coursework.

Self-efficacy is the self-confidence in one's own aptitude to persist and succeed in online learning environments. This is one element explored in studies such as Remesal and Colomina's (2013) research. Sixteen student teachers of an Educational Psychology course voluntarily participated in the study. The students formed self-selected groups of four members each. The volunteers of the study were freshmen, with a mean age 19, two male students and fourteen females. The qualitative analysis evaluated four different groups while they interacted in a virtual environment. They worked on one collaborative writing assignment. The students were

instructed to agree together on the selection of the topic and then evaluate educational practices observed in the classroom. Researchers found a clear connection between the creation and maintenance of Social Presence and the success of the group tasks. In other words, online group collaborations do better when individuals are highly present and engaged (Remesal & Colomina, 2013).

According to several research studies, age was found to be another characteristic to be considered (Baker & Moyer, 2019; Bean & Metzner, 1985; Beatty-Guenter, 2003; Bettinger et al., 2017; Clarke, 2017; Evans et al., 2017; Hawkins, 2012; Lander, 2009; Lee et al., 2013; Romero, 2016). Through research regarding personality traits of more successful students, older students were found to have higher levels of conscientiousness and in many cases succeed at higher rates. In studies looking at who enrolls in online programs and courses, a common finding is that at-risk students disproportionately take advantage of online coursework (Deming et al., 2015; Hawkins, 2012; Jaggars, 2014).

Jaggars and Xu (2010) have made several key findings regarding online learners. Students who took online classes: (a) early in their community college careers and in particular, in their first semester, were less likely to reenroll in subsequent semesters; (b) in developmental English and math courses were less likely to succeed in their future college-level English and math; and (c) more frequently were less likely to be retained, earn a credential or transfer to a four-year institution. These findings add to the narrative that online learning may hinder student academic progress in a community college.

Digital Divide

Distance education became an innovation and with the creation of the internet and online education, the technology strengthened its impact, particularly for students of lower income

backgrounds. With the emergence of the internet, low-income students saw a path to a post-secondary education because of the flexibility that online education offered. By studying online, students can study on their own time and avoid commuting to campus at specific times for a class. These characteristics allow them to fit an education into a life that includes parenting, working full-time and numerous other responsibilities. The internet became the technology that could bridge the disparity in educational achievements.

As the percentage of traditional aged students in community colleges continues to grow, they will include a greater number of students who are considered digital natives. While some view the use of the Internet as second nature because they have spent their entire lives with online technology (Mansfield, 2017), lower income young students have not had the same privileges regarding access to technology that higher income students have. There is a general assumption that young, traditional age students who are "digital natives" because they grew up with technology, are naturally "savvy" to using technology, producing further expectations about their success. This ignores the reality of how low-income students have experienced growing up with technology. In reality, those from economically disadvantaged backgrounds have grown-up with less access to computers and the internet because of the associated costs (Smale, 2017). These are some of the important components that community college leaders must consider to increase the success of lower-income students in online courses. To meet all community college students where they are, colleges need to understand what increases the effectiveness of online learning and commit to what works for all students online.

For low-income students, accessing the internet has created new challenges to completing a college education. For some, the inability to afford a personal desktop computer, laptop, broadband and WIFI connection has prohibited participation in college (Smale, 2017). In

February 2019, the Pew Research Center reported that 81% of adults owned a smartphone. This is up from 55% in January, 2014 (Smale, 2017). The proliferation of smart phone usage among adults has prompted some students who cannot afford the internet or a computer to do homework and papers via their phone. Because of its popularity and accessibility, smartphones have surpassed desktop and laptop computers for low-income Americans and how they access the internet. Today, about twenty percent of American adults are "smartphone-only" internet users, which means that they own a smartphone but do not have a home desktop, laptop or broadband service.

Researchers have expressed concern that technology may actually replicate the systemic inequalities of our broader society, and "while the use of digital technology by college and university students may ideally be intended to resist and dismantle these inequalities, it may actually reinforce them" (Smale, 2017, p. 7). Therefore, the quandary exists that low-income students who need online education as an affordance to bridging the disparity in degree completion tend to struggle in an online environment because of the risk of isolation and their difficulty navigating alone.

Effectiveness

In general, the technology used to deliver an online course is not the factor that matters; what matters is the quality of the course design and instruction that goes into the mode of delivery. This section will lay out the argument that effective teaching practice in online courses must include quality faculty-student interactions and that low-income students in a community college environment need it but may not be sufficiently engaged in these types of interactions. Providing this sort of socially-just pedagogy to low-income community college students will increase their chances for success.

Course Design

Based on the work of Jaggars and Xu (2011, 2013), four major elements of course design were found to impact online course effectiveness. First, the course needs to be well organized and easy to navigate. Secondly, the grading structure and how the students will be evaluated must be clear. Next, quality interactions in the course must exist and finally, technology should be used in a meaningful and effective way (Jaggars & Xu, 2016). Moreover, Jaggars and Xu's study strongly suggested that frequent and effective interactions between the faculty and students influenced students to perform at a stronger academic level.

This is echoed in *Quality Matters* guidelines. In 2003, *Quality Matters*, a nationally recognized organization committed to ensuring quality in online courses, started to create rubrics for which motivated faculty can certify quality in their online courses (Quality Matters, 2019). The eight general standards of this rubric are, Course Overview and Introduction, Learning Objectives (Competencies), Assessment and Measurement, Instructional Materials, Learning Activities and Learner Interaction, Course Technology, Learner Support, Accessibility and Usability. While not a common practice everywhere online courses are delivered, Quality Matters certification practice is starting to catch on.

Course design and faculty-student interactions are two components of online courses that can tell us about its effectiveness. Research shows that students are less likely to complete their online courses than their courses that meet in person (Beatty-Guenter, 2003; Carr, 2000; Chambers, 2002; Moore et al., 2003). A review of the literature shows that quality in online instruction must be in place for online college students to succeed (Bangert, 2008; Bernard et al., 2009; Dixson, 2010; Escueta, 2017; Jaggars & Xu, 2016; Martin et al., 2019).

According to some experts, online courses must include certain elements for success and benchmarking best practices in quality online faculty interactions is commonly used to focus college attention on the educational programs and policies that may need improvement and on those that work, are creating equitable outcomes and should be expanded. The Community College Survey of Student Engagement (2019) survey instrument was designed to benchmark and understand an institution's student engagement. Colleges who participate can use the results as a measure of quality. The survey items are based on research about post-secondary educational practices and student behaviors related to student persistence and student learning.

A growing body of research continues to show that active and collaborative learning, student-faculty interaction, high expectations, time on task, and regular, prompt feedback on academic performance are all important factors in promoting learning and student development (Cavalcanti, et al., 2019; McClenney, 2006). Using benchmarking tools, a community college can obtain evidence about their students' educational experiences, examine differences among demographics, benchmark effective educational practice, and establish targets for improvements (McClenney, 2006).

Community Colleges in the United States

For thousands of American students, a postsecondary education is critical but can be out of reach. Community colleges were born in the early part of the 20th century in part to fill this need. Additionally, community colleges came at a time when the United States wanted to further grow as an economic powerhouse and needed more well trained workers to achieve its dominance. In 1947, the creation of the Truman Commission on Higher Education encouraged the development of community colleges, the expansion of adult education programs, and the distribution of Federal aid to education in such a manner that the poorer states could bring their

educational systems closer to the quality of the wealthier states (Dowd, 2003). The Commission knew that financial considerations were too influential on the narrative of who attends college and set up a system that would allow all qualified young people the opportunity and access to afford college. Because the schools are publicly funded, they serve the needs of the community by offering an affordable option for students who lack adequate resources to attend other types of higher education institutions.

Community colleges have always carried out the needs of the government by taking on the problems of society. Schmid (2010) asserted that community colleges play a very important role in American education. Most first responders in the nation, namely, firefighters, police officers, and emergency medical personnel, among others, graduate from community colleges. Because community colleges have an open admissions concept, the student body is very diverse.

The community college has seen a steady rise in online enrollment because of its attractiveness to working professionals and students from nearby universities. While university students are home for the summer months they take advantage of taking credits needed to graduate. Students can fulfill their requirements at a much cheaper cost by taking community college online classes. Additionally, some students start at a community college and then they transfer to a four-year university. They know that by doing this, college becomes more affordable for them. There are institutional barriers that low-income students face when they enroll in a community college. Garcia (2010) explained that college staff should be knowledgeable about all of the issues at-risk students face (for example, attendance, withdrawal, financial aid, etc.) so that they can increase the chances for retention and graduation. In a time when community college enrollment is increasing alongside declines in state funding, college

leaders and policymakers have promoted online education as an affordable way to serve additional students (Xu & Jaggars, 2013).

Modes of Delivery

Subsequently, several online modes of delivery emerged including asynchronous and synchronous. Asynchronous allows a student to learn at a time that is convenient for them. Synchronous delivery is a mode requiring that all students attend class online at the same time with the teacher. These courses allow for more interaction with faculty but are more time intensive and costly and are not common within community college offerings.

Unfortunately, studies have shown that the asynchronous format is not providing what students need in order to learn. In a 2010 study, Ward et al. found that students perceived asynchronous online learning to be inferior to both face-to-face and synchronous formats in terms of instructional quality. The ability of asynchronous online learning to address quality interactions were consistently and significantly lower than the ratings for both face-to-face and synchronous formats.

In another study, Jaggars (2011) examined course completion and grade outcomes for students enrolled in college entry-level English and math courses delivered asynchronously across twenty-three Virginia colleges. Findings included that students who participated in asynchronous online courses had significantly lower course persistence rates and grades than their face-to-face peers. Expanding upon this work, Xu and Jaggars (2013) conducted a similar study focused on 34 public, community colleges in Washington State. Their 2013 study produced similar results, evidencing the negative effect of some online instruction for community college students. In both cases, Xu and Jaggars (2011, 2013) attributed their findings to the demographics of community college students who work more hours, are underprepared for

college level work, are first-generation, and have family responsibilities. Purely asynchronous online courses are likely to limit opportunities for networking and interacting with instructors and peers, potentially hampering the educational process.

Realistically, the only way that some low-income students can access a college education, while living their busy lives, is to enroll in distance courses that are offered in an asynchronous format. The issues related to the lack of appropriate funding, structure, and time needed in order to design and deliver high-quality courses and structures to guide, interact with, and teach students while supporting faculty are complex and must be studied (Bailey et al., 2015). Considerable time and money can make the delivery of a quality online course a reality but at the community college level those two elements are scarce.

Low-Income Community College Students

This section of the review will help to define who is considered a low-income college student, discuss the persistence and success to-date of low-income community college students in an online environment, and discuss some of the characteristics that low-income students bring to college that help or hinder their progression.

One way to understand the percentage of low-income students who attend community college is to look at the percentage of students who are eligible for financial aid. The federal financial aid program (including the Pell Grant) is a need-based program designed to help low-income students pay for college. In general, high numbers of students who qualify for federal financial aid attend community college. Lower-income students are attracted to the community college environment as evidenced by about 44% of students from low-income families (family incomes of $25,000 or less) attending community college straight out of high school (Anderson, 2015). According to a Department of Education's Integrated Postsecondary Education Data

System (IPEDS) report (NCES, 2019), the percentage of students awarded financial aid at 2-year degree-granting postsecondary institutions in 2000-01 was 57% of undergraduate students and grew to 75% in 2016-17.

It is widely known that a common reason why low-income students pursue college is to improve their family's economic situation and to rise up into a career with a more stable salary (Cohen et al. 2014; Furlong & Cartmel, 2009; Ocean, 2017; Spriggs, 2018; Viggiano et al., 2018). Students from low-socioeconomic backgrounds find online courses to be a desirable option due to the ability to work full time and study at a time that is convenient to their busy schedules.

Research is replete with studies showing that online students have lower course completion rates than their peers who have enrolled in face-to-face courses (Beatty-Guenter, 2003; Moore et al., 2003). This may be due to a variety of factors, including limited teacher-student interactions (Bambara et al., 2009); technological barriers; and the need for students who enroll in online courses to have higher levels of motivation (Tallent-Runnels et al., 2006). A 2017 report by the Center on Education and the Workforce at Georgetown University found that almost seventy-five percent of Pell Grant recipients are from families making less than $30,000 per year; this is defined as low income (Carnevale & Van Der Werf, 2017). For Americans who must work to support a family while going to school, a Federal Pell grant, which does not have to be paid back, is critical to boosting the economic status of a family. However, some who study student success have gone as far as to say that community college has had little impact on a person's fight to enter a higher social class; and actually, keeps students in the social class of their parents (Cohen et al., 2014).

Outcomes

Over the last decade, studies have shown that while low-income community college students are able to afford community college with assistance from the Federal Pell grant program, there has not been much improvement in college attainment, resulting in a graduation gap (Engle, 2008; Jaggars, 2011). Musu-Gillette (2015), who co-authored the study for the National Center for Education Statistics, reported on the disparity she found between poor students and rich students. In this study, they followed a cohort of 15,000 students and found a large disparity; 60% of students from the highest income families graduated from college, whereas only 14% of those from the lowest socio-economic status did.

The 2017 North Carolina Equity Report looked at post-secondary exposure, meaning the percentage of individuals 25+ with some college or more education. The aggregate total for the state is 61% for the year 2017. The group with the lowest percentage with this designation are Hispanics with a total of 34% (NCCC, 2019). The same equity report exposes that in North Carolina black women are the demographic with the highest percentage of Pell grant recipients with 79% receiving and black males are the second highest with 69% receiving. Next, when looking at the percentage of fall, 2017 first-time curriculum students enrolled full-time, Black females and males came in with the lowest percentages of 47% and 51% respectively. With regard to accumulated hours, the lowest number of hours for the semester was 10.9 for Blacks and the largest number, 12.3 was earned by Asians. This North Carolina report does not specifically address online coursework but provides information pertaining to higher education as a whole. including all delivery methods of coursework.

What has become evident is that it takes much more than just money to help students succeed in college through completion. Researchers have been writing for decades on the equity

conundrum and in 2000, Gladieux wrote about the puzzle of college completion for low-income students. He posited that financial aid is critical but insufficient on its own in equalizing college outcomes (p.691). Just getting to college can be a hurdle almost impossible to overcome for some. Beyond financial aid, Gladieux (1999) also knew that instruction without interactions will weaken outcomes for students from low socio-economic backgrounds. He wrote,

> The Open University has attached great importance to such interactions, including face-to-face tutorials where possible. Sir John Daniel, vice chancellor of the Open University, warns: "Much of the commercial hype and hope about distance learning is based on a very unidirectional conception of instruction, where teaching is merely presentation and learning is merely absorption. The Open University's experience with two million students over 25 years suggests that such an impoverished notion of distance education will fail – or at least have massive drop-out problems" (AAHE Bulletin, 1998, p. 11).

Hernandez and Lopez (2004) agreed that financial assistance is essential to the retention and enrollment of students from low-income backgrounds in higher education.

The difficulties low-income students have accessing and completing a higher education credential is well documented (Becerra, 2010; Cohen et al., 2014; Gair & Baglow, 2018; Viggiano et al., 2018). Chen (2005) found that first-generation students who gain access to post-secondary education and enroll have difficulty persisting and attaining their degree. He discovered that first-generation students completed fewer credits, took fewer academic courses, earned lower grades, needed more remedial work, and were more likely to withdraw from or repeat courses they attempted. In addition, low-income students are more severely affected by mistakes, like withdrawing from too many courses and taking on too much debt. Furthermore, if

a student fails or withdraws from an online course and has to pay some of the expenses back, it can negatively influence the student's chances of being retained and continuing their education (Bailey et al., 2015).

According to a 2016 research paper published by the Institute for Policy Education at the John Hopkins University, students from low socio-economic backgrounds graduate from college at a lower rate. In the policy report, college graduation rates for students from the lowest income quartile in the sample were 14%, whereas students from the highest income quartile graduated at a rate of 60% (Bjorklund-Young, 2016). This finding of the study, as well as others, demonstrated that low-income students graduate or complete a credential at a much lower rate than traditional college students from middle to high-income brackets (Backhaus, 2010; Evans et al., 2017; Hawkins, 2012; Jaggars, 2014; Romero, 2016).

Underpreparedness

Approximately two-thirds of incoming community college students fail to meet their institution's standards for college readiness (Bailey et al., 2009). According to Schademan and Thompson (2016), First Generation, Low-Income (FGLI) students arrive at college with diverse forms of readiness that require varying forms of nurturing and support. They promoted the practice of supporting faculty and other campus cultural agents in nurturing the success of FGLI students.

Access to competitive four-year institutions is easier for higher-income families and much of that has to do with their access to high quality, rigorous and advanced placement courses in high school, typically not available in low-income communities. Therefore, higher percentages of low-income students start at open access 2-year colleges.

Faculty perceptions regarding online readiness has also been recorded. For example, in a study conducted by Shea and Bidjerano (2014), the faculty interviewed strongly advocated for improved screening of students' readiness for online course enrollment. Students who wanted to enroll in online courses often exaggerated their readiness and mastery of an online course. Some faculty stated that students should be screened out of taking online courses if their GPA is below a specific point.

Characteristics of low-income community college students are that they (a) frequently lack the preparation for a successful transition to college (Clarke, 2017; Jaggars, 2011; Lee et al., 2013); (b) are minority; (c) first-generation college go-ers; (d) have weaker academic backgrounds; (e) enroll part-time; (f) are slightly more likely to be female; (g) are over the age of 25; and (h) tend to work more than their higher socio-economic peers (Cohen et al., 2014; Protopsaltis & Baum, 2019; Xu & Jaggars, 2011).

In a 2017 study of online physics lectures that accompanied face-to-face labs, Murphy and Stewart used eight years of data to determine course completion rates and confirmed findings that report that at-risk students and students with a history of poor academic performance show greater preferences for enrollment in online courses but complete at a much lower rate. Realities like this make it likely that underprepared students without strong academic skills struggle without the classroom structure and their inherent interactions (Escueta, 2017). When students have a weak secondary education; they find that they are not prepared for college courses. This causes them to feel unprepared and therefore often find it easier to quit.

Even more troubling is that in some studies high-achieving, low-income students are still at a higher risk of non-completion than their higher income counterparts (Wilson, 2016). Not all studies focusing on lower-income students are negative though. When looking at what helps low-

income students succeed, one study found that those with higher levels of on-campus involvement were found to stay in school and achieve higher grades (Bell et al., 2016).

Faculty-Student Interaction

Research devoted to the importance of interaction in online learning is extensive, with most concluding that faculty-to-student interaction is critical to effective online course design and achievement (Beaudoin, 2002; Picciano, 2002). These interactions play a critical role in student motivation, enhanced learning and academic success (Allen & Dika, 2020).

For decades, the hope was that online courses would improve the quality and interactions that were missing in correspondence school education. As early as 1967, Börje Holmberg (1967) explained that in a correspondence education format, two-way communication is the backbone of correspondence education and is the instructor's responsibility. He argued that instructors must go beyond what is written in a textbook and explain to students the importance of what is written (Holmberg, 1967). A common element for learning in a typical classroom is the interactions that take place between the students and the instructor and student to student. Asking questions, debating and sharing opinions are all crucial for learning to take place. In the 2013 report from the Community College Research Center, dozens of interviews with students were conducted where students voiced that strong interaction with faculty helps them to believe that the instructor cares (CCRC, 2013). Students stated in the interviews that they do not learn the course material as well online, and they feel that this deficit is due to less teacher explanation and interaction in online courses. In another study, low income students were asked why they withdrew from the online course and one student in particular stated that she withdrew because the lack of communication with her instructor was very frustrating (Carrasquel-Nagy, 2014).

While individual students may elect not to initiate contact with qualified faculty, program design must include periodic contact by qualified faculty with the students. Those contacts could be made through the use of email or other social media, but must create the opportunity for substantive interaction. Without intentional improvements in online teacher-student interaction, it is likely that students will continue to prefer face-to-face courses in subjects they perceive as more challenging or incompatible with the online format.

While an automated system for initiating contact with students could be one aspect of program design, such a system in and of itself could not meet the requirement for regular and substantive interaction. The term "regular" means periodic and should be understood as predictable regularity and built into program design. It also refers to the opportunity for interaction with a student and it is relevant to the academic subject matter in which the student is engaged. Substantive interaction could include direct instruction, substantive feedback to assessments, or, as described above, contacts with students that create the opportunity for relevant discussion of academic subject matter.

Instructor Presence

The literature is univocal when it comes to the importance of faculty interaction as a critical component of quality online education (Protopsaltis & Baum, 2019). There are three primary ways that faculty can promote student success in the online classroom; faculty presence in the course, the frequent and meaningful interactions with students and professional development to increase faculty competence.

Teacher presence and faculty interactions with students in online classes compared with face-to-face classes are still unequal. Students have complained that without proper interaction with their faculty, they are essentially teaching themselves the content. Additionally, the lack of

interpersonal connections mitigates students' sense of social presence in the course (Gunawardena & Zittle, 1997; Young & Norgard, 2006) and works against the formation of a learning community. The literature shows that distance education courses must create purposeful interactions for students and instructors. To that end, a sense of social presence has been shown to correlate with online student course satisfaction, performance, and retention.

At the Florida State University School of Information, the retention rate among distance learners in the master's program was over 98% in the first four years. Researchers wanted to find out why and conducted focus group and individual interviews. In addition, unsolicited email and telephone comments were compiled and coded. Findings included that students would repeatedly cite responsiveness of the faculty and technical staff, there was a sense that courses contained high interaction with instructors and classmates, and faculty incorporated well-formulated use of interactive chat technology to support real-time interaction. These were some of the major factors in the students' decision to persist through the degree program (Burnett, Bonnici et al., 2007).

Community college students often lack social presence and interaction in online courses. In a 2001 study of the Virginia community college system found that 43% of students who participated in online learning expressed inadequate levels of interaction. Specifically, vulnerable and underprepared students complained there is a lack of direct assistance and explanation from instructors (Jaggars, 2011).

In a review of the costs and benefits of learning online, researchers at the University of Nevada, Las Vegas identified a number of key learning resources that make it more difficult for students to be successful as a result of learning online (Lei & Gupta, 2010). For instance, instructors are not able to help students with impromptu questions; there is delayed feedback

from instructors. There is also a lack of direct assistance and explanation from instructors. Students cannot facilitate discussions and cannot observe how others may react to their questions or suggestions. It also helps getting instantaneous feedback to a question that someone else has brought up. (Lei & Gupta, 2010). The development of presence is key to a quality online course and a lack of it will cause learners to drop out (Bean & Metzner, 1985; Rovai, 2003; and Workman & Stenard, 1996).

In a survey designed to gather the opinions of award-winning online teaching faculty, Martin et al. (2019) reported that the most important role of the online instructor, according to those interviewed, is the facilitator and instructor's "presence." They stated that "being there" for students and "having a presence that the students felt on the course site" were essential. Descriptors like mentor, interactor, counselor, and facilitator were common when defining the most effective attributes to promote student learning (Martin et al., 2019).

Interactions with Students

Ever since online learning started, opponents have been skeptical, challenging technology's ability to provide quality instruction and refuting its ability to replace the human factor in brick and mortar higher education (Phipps & Merisotis, 2000). This section will operationalize frequency and meaningfulness for the study.

The argument for frequent and meaningful interactions is the subject of numerous studies and continually presents evidence that in order to separate self-learning from distance education, online instructors must provide regular and substantive interactions with their students. For vulnerable students, for which online provides access to education in their busy lives, unless instructors interact, the student's success is at risk.

Online Standards

As previously noted, student-faculty interaction is one of the five benchmarks used in the Community College Survey of Student Engagement (CCSSE) survey (Center for Community College Student Engagement, 2019). This survey allows community colleges across the nation to benchmark and compare their performance to others. The CCSSE survey includes questions about students' experiences with the interactions they have when communicating with an instructor through email to discuss grades or assignments, readings outside of class. Additionally, the survey asks students about the frequency and prompt nature of the feedback on their academic performance. CCSSE had surveyed almost 400,000 students enrolled in 404 community and technical colleges in forty-three states, which represents 36 percent of the nation's community colleges and 37 percent of community college credit students. McClenney (2006) writes that the CCSSE allows colleges to be fully transparent and accountable by publishing their outcomes. Contact between faculty and students is a pillar of student engagement citing that the more meaningful contact students have with their instructors, the more likely they are to learn successfully and persist toward completion of a degree. Unfortunately, many national averages—whether for student-faculty interaction or for graduation rates—are generally not at the level where they need to be. Thus, community college educators must continually ask themselves, is our current performance good enough? Engagement does not happen by accident, instead, it must be intentionally designed (McClenney, 2004).

Proponents of online education advocate that interactions with faculty reinforces students' connections to the college and helps them successfully continue their studies.

Cole et al. (2014) conducted a three-year study of student satisfaction with both graduate and undergraduate students in online business courses. The researchers were able to obtain a large overall response rate of 92% partially due to the extra credit in their course that was given for completing the survey. The results of the survey indicated that "convenience" was the greatest factor influencing student satisfaction with online courses and "lack of interaction" with instructors and classmates was the main source of dissatisfaction (Cole et al., 2014).

In one article, Burnett et al. (2007) analyzed the extent and types of interaction that contribute to student satisfaction. Chat sessions and discussion boards within eight master's level web-supported courses in Fall, 2000 were analyzed. Frequency for this study was defined as the mean number of interactions per student enrolled occurring each workday during the academic term. Researchers also looked at the topicality and intensity and through coding the content and conducting interviews with students found that all three contributed to student satisfaction. The researchers were quick to point out that through interaction and collaboration the curriculum assists students in constructing knowledge.

> In focus group and individual interviews, and unsolicited email and telephone comments, students repeatedly cited responsiveness of the faculty and technical staff, high interaction with instructors and classmates, and the well-formulated use of interactive chat technology to support real-time interaction as major factors in their decision to persist through the degree program (Burnett et.al, 2007, pp. 24).

Additionally, during the interviews, students reported that they preferred synchronous communication to asynchronous. The data indicated some support for the statement that the less frequent the interaction, the more likely it is that students will express dissatisfaction with the

course. In conclusion, the researchers found that student satisfaction is tightly coupled with the perception of the instructor's engagement in course interaction.

Meaningful interactions have been an important topic in educational outcomes for decades. For example, working with an instructor on a project or participating with instructors in a student club or committee lets students practice their critical thinking and problem-solving skills. Meeting with instructors during office hours and obtaining feedback, both positive and negative, the faculty members become role models, mentors, and coaches.

Academic-focused interactions are crucial to learning and empirical studies have found technology with no human interaction is not as helpful to learning as hoped. In Balaji and Chakrabarti's (2010) study on interactions in online discussion forums, 227 participants were surveyed to determine the role that online interactions played on perceived learning. Perceived learning was found to be highly correlated with both media richness and interactivity. Rich media is online media that assists instructors to provide immediate feedback, message personalization, and better interactions. Students are found to learn faster and more effectively when they are provided with instructor feedback and information on what might be needed in order to improve their current performance (Balaji & Chakrabarti, 2010; Cavalcanti et al., 2019). The results provide evidence that instructors who facilitate discourse have a strong positive outcome on the student's interactions and a significant positive effect on learning in the course.

With all its flexibility and portability, the online classroom is still seen by many as inferior because of its tendency to isolate learners. Studies note that a major reason why many faculty who teach online still prefer to teach in a classroom is because they perceive they are better able to connect with their students and assess their understanding in a traditional setting (Oomen-Early & Murphy, 2008).

The State of California developed the Title 5 Distance Education Guidelines (California Department of Education, 2020) to describe best practices required for quality distance education in the California Community College System. Striking of the term "correspondence" from the previous language and distinguishes between distance education and correspondence courses on the basis of regular and substantive interaction.

The state and federal regulations require that faculty are actively participating meaningfully with DE students and creating learning environments where they engage meaningfully with one another. These guidelines include instructor contact, course design and approval, faculty training and workload, and class size caps. Establishing and maintaining regular effective contact is an important aspect of delivering an online and hybrid course. It is not only a Title 5 requirement, but is also a practice that encourages and facilitates student-centered instruction and increases student-learning outcomes.

Pasadena Community College's (2019) website shows evidence of adhering to the guidelines. Any portion of a course conducted through distance education includes regular effective contact between instructor and students, through group or individual meetings, orientation and review sessions, supplemental seminar or study sessions, field trips, library workshops, telephone contact, correspondence, voicemail, e-mail, or other activities. Regular effective contact is an academic and professional matter and in correspondence courses, these interactions were mostly absent (Procedure, 2015)

In their study, Lundburg and Schreiner (2004) created and delivered a survey involving 4,501 undergraduates to better understand the role of interactions with faculty to student learning. They were particularly interested in the role that race played on the types of interactions and the outcomes. The researchers found that for all races a common thread among

the faculty engagement variables that entered every equation was the positive influence faculty members have on student investment of energy in academic endeavors.

For every group, at least one of the effort variables related to faculty interaction entered the equation; those were “worked either harder due to faculty feedback” or “worked to meet faculty expectations”.

In a similar study, Palacios and Wood (2016) found that Asian, Black, Latino, and White men were more likely to have higher success outcomes when engaged in face-to-face modalities. There were no clear patterns in which online modality was better than others with regards to success, except for Black men. For these men, asynchronous with multimedia was identified as the second most effective online modality pertaining to success. This research has demonstrated the manifold benefits of face-to-face instruction. This finding supported Pace’s (1990) notion that student effort is a strong predictor of learning, and highlights the important role that faculty relationships play in boosting that effort for students of all racial/ethnic groups.

In a study regarding graduate student online learner preferences for interactions and which interactions students found important, Zimmerman (2002) found that instructor feedback is one of the most important attributes of interaction and students reported that instructors should make every effort to give them feedback to them at least two times per week.

There is a body of literature arguing that even without strong online presence, students who “lurk” in the background and “watch” others interacting in a highly visible way are still learning. Beaudoin (2002) found this to be true in his study of a graduate level online course. Faculty of two jointly offered sections of an online course noticed that 24 out of the 55 students enrolled in the online sections were not actively participating and interacting. A questionnaire was administered to investigate the reason for their inactivity. Students gave answers including

that they were new to online education and were learning the technology too, they didn't have more to add other than what they were reading from the preceding posts, to not enough time to participate. In the end it was found that students with low participation were still learning the course material but that students with high participation did better on the assignments and activities of the course. Therefore, for some students who choose to not interact on a high level, we must consider that they still might be learning.

The inequitable nature of online course outcomes continues to creep back into the conversation (Larreamendy-Joerns & Leinhardt, 2006). Additionally, Bambara et al.'s 2009 study examined the social presence of students enrolled in high-risk online courses (HRCs), so-called because 30% or more students withdrew or ended up with a grade of D or F. The researchers found the primary complaint was the feeling of social isolation in the course.

Swan (2003) conducted a review of the literature and summarizes that interactions with instructors are critical in all learning environments but perhaps more critical online. She found that when there is no classroom in which students can connect with their instructors, instructor-student interactions must be made explicit. Frequent and supportive interactions with instructors, thus support online learning.

In his seminal work, Michael G. Moore (1989) describes possibly the first outline of success factors related to distance education. He is one of the first scholars to talk about the importance of faculty interactions. Moore explained that faculty have an important job, they are responsible for stimulating or at least maintaining the student's interest in what is to be taught, to motivate the student to learn, to enhance and maintain the learner's interest, including self-direction and self-motivation. Beck and Ferdig (2008) revealed that the role of the teacher

transformed from teacher-centered to student-centered, low-interaction to high-interaction, and low-initiator to high-initiator.

In a 2010 study that focused on Hispanic students in community college, some students who reported having difficulty reaching their online instructors for help discovered that they needed the discipline of attending classes on campus. Unfortunately, for some, they discovered this after being enrolled in an online class and often just stopped participating in the online class. "I stopped attending those classes a long time ago.'' He explained, ''There was not a lot of interaction from the teacher and he learned that taking a web class was not for him because he requires the discipline of face-to-face contact with an instructor'' (Garcia, 2010).

Faculty Interactions and Low-Income Pell-Eligible Students

Online education is failing America's poor students and in danger of replicating the severe economic imbalance operating on our nation's campuses. This brings a renewed focus on the institutions that receive federal financial aid and their commitment to improving the personal interactions with faculty offered in digital courses. Otherwise, online education is looking like it could be yet one more luxury product for America's privileged students (Ubell, 2018).

All students need encouragement, support, feedback and interactions from their faculty to succeed in online courses (Cavalcanti et al., 2019). To answer the question, do low-income students require it more, we return to the argument for the democratizing role that a community college education must provide for lower-income students. Lower-income students are frequently coming to college underprepared and need the guidance of their instructor to teach them skills, such as, time-management, study skills, and how to be a college student. A poor structure of interactions in an online course will create no clear division between self-learning and education. The concern remains that by asking community colleges to be more efficient and

productive, without a focus on equity, the push for high quality interactions is less evident. “It is time to move beyond the mantra of access and benchmark success by equal outcomes” (Dowd, 2003).

There remains a gap in the literature focusing on low-income community college student perceptions of their interactions with faculty, especially within an online context. In a 2009 study looking at survey data for 58,281 undergraduates in the state of California regarding faculty interactions, Kim & Sax (2009) results revealed differences in outcomes with regard to student-faculty interaction and gender, race, social class and first-generation status. The interactions in this study were in-person and results show that statistically significant differences existed for racial groups and social class. For instance, Asian American students were more likely to assist faculty with research. African American students reported talking and communicating the most but demonstrated assisting with research less frequently. Students from upper-class families were more likely than students from lower- or middle-class families to assist faculty with research for course credit, communicate with faculty and interacted with faculty during lecture class sessions (Kim & Sax, 2009).

In contrast, students from lower-class families were more likely than their classmates to assist faculty with research for some sort of pay. The results also show that when socioeconomic status rises, so does students’ satisfaction with faculty interaction. The effect of course-related student– faculty interaction on the student's overall GPA and overall satisfaction was significant and positive for all individuals except African Americans. Females, Whites, upper-class students, and non-first-generation are more satisfied with their interaction with faculty than their male, non-White, lower-class and first-generation peers (Kim & Sax, 2009).

Schreiner et al. (2011) found when students are connected to their faculty and college they were more likely to have success with their college experience. Mounting evidence indicates that students in online education, and in particular underprepared and disadvantaged students, underperform and experience poor outcomes. Gaps in attainment across socioeconomic groups are larger in online coursework than traditional in class coursework (Protopsaltis & Baum, 2019).

The need for faculty to be proactive in student online learning has been voiced by a number of writers (Johnson, et al., 2015). Seay (2006) made the conclusion that in the online classroom, faculty need to be both instructors and learning assistance coaches. Online instructors must interact with low-income and first-generation adults because this demographic does not typically have a realistic assessment of what success in college entails.

Garcia (2010) reported common factors for the attrition of first-year Hispanic students, which include poverty, poor quality of elementary and secondary education and infrequent student-faculty interaction in higher education.

Finally, a 2012 comprehensive literature review concluded that "there is a much greater likelihood that a candidate with an online degree would be viewed less favorably for employment compared to the candidate with the face-to-face degree." One major concern cited by employers about online learning was the lack of interaction, and in particular face-to-face communication between students and faculty (Linardopoulos, 2012).

Faculty Competence and Time Commitment

The movement into online education has raised concerns about the workload demands placed on faculty teaching. Faculty report that online courses require more time investment than face-to-face courses. In a 2007 study by Mandernach et al., the researchers investigated the

faculty time investments for facilitating online instruction and interactions. An investigation in the time needed for course development and online course instruction was completed. Ambiguity related to the availability of faculty in a 24/7 online environment was also raised as a concern for the time required to teach an online course (Mandernach et al., 2007).

> Unlike a scheduled face-to-face class in which there are pre-set constraints on the timing of a class period, office hours and instructor work-day, the continuous, open nature of the virtual classroom raises a host of questions surrounding the frequency of expected instructor interaction, the timing of interactions, and an instructor's availability to students" (p.2-3).

According to Gagne and Shepherd (2001) students are demanding a greater level of instructor interactivity and studies have shown that online students are less satisfied with instructor availability than the in-class students. In the Mandernach et al. (2007) study, 10 randomly selected undergraduate courses were analyzed to understand the mean number of days per week of faculty interaction. They concluded that weekend time was utilized to assist students working to get their work done. This finding prompted the researchers to recommend faculty consider that teaching online courses may not take any more time than teaching face-to-face but that the time investment is distributed differently throughout the week. "Students lack the metacognitive ability to question their own mastery of course concepts; this is my role as a content expert. I would never sit silent in my classroom, so why would I be silent in the asynchronous discussions" (p. 6). More than ever, experienced online instructors sharing their best practices is crucial to the improvement of outcomes.

An alternate view might say that not all students need or want frequent interactions with faculty. Wandler and Imbriale's (2017) looked at teaching and promoting the use of self-

regulated learning (SRLS) which can result in positive student academic achievement. SRLS is the regulation of one's thinking and actions. Examples of self-regulated learning tactics include goal setting, metacognitive monitoring, help-seeking and self-evaluation, receiving tutoring, keeping a study log, and emailing the instructor (Wandler & Imbriale, 2017). The researchers encourage faculty to actively teach students these skills because students do not necessarily develop SRLS while taking online courses but are important in online coursework because of their autonomous nature. One example of how teachers can promote SRLS is through texting. Reminders through text like deadlines, emphasis on what content to focus on, office hours and motivational messages were shown to boost academic performance of students who received the texts. Faculty should work closely with their campus instructional designer to build better online courses (Wandler & Imbriale, 2017).

Summary

Community colleges, where nontraditional students still struggle to make a better life for themselves and their family, remain concerned that online delivering education may not be the best choice for those most economically and socially vulnerable. More research is needed to understand low-income community college student perceptions of what kinds of faculty interactions helps them succeed in online courses.

Assessing an institution's online pedagogy reflects a significant commitment to both transparency and enhancement for those who are most vulnerable to complete their college education. Unfortunately, too many colleges nationwide report that whether for student-faculty interaction or for graduation, rates are generally below acceptable measures (McClenney, 2006). Thus, community college educators must frequently ask a series of questions that take courage,

for instance, is our current performance providing enough interaction to positively impact a student's learning and persistence?

Because community college students juggle multiple responsibilities, families, jobs, and community obligations in addition to their studies, because they commute to college and tend to leave campus after class, and because they bring multiple challenges to college with them, engagement does not happen by accident. Rather, it has to happen by design. Given this reality, community colleges are called upon to rethink and redesign educational experiences for students, making connections and engagement virtually inescapable (McClenney, 2006).

The following chapter will explain to readers the methodological approach chosen for this study. A discussion of the instrument, the site and the participants will be described to give a better understanding of the context.

CHAPTER 3: METHODOLOGY

The purpose of this study was to explore how perceptions of faculty interaction are related to socioeconomic status and low-income student success of community college students in online courses at an urban community college in the southeast. This chapter provides an explanation of the methodology used for this study. A discussion of the research design is followed by a discussion of the population sampled, a description of the instrument used to collect the data for the investigation, the procedures for conducting the investigation, the descriptive and inferential statistics, and coding process.

A survey research design was employed to examine student perceptions of interactions with faculty in online courses and how those are related to socioeconomic status (Pell Grant eligibility) and expected grades. Using a questionnaire for data collection allowed me to gather Likert-scale type responses as well as providing an opportunity for students to answer an open-ended question that allowed for a deeper understanding of the relationship among variables (Creswell, 2013).

Research Questions

For an online course to produce a successful student learning experience there must be substantive and frequent interactions between the instructor and their students (Garrison & Cleveland-Innes, 2005; Martin et al., 2019; Pelletier, 2013; Romero, 2016; Young & Norgard, 2006). In response, this study sought to answer the following questions:

1. What are students' perceptions about the frequency and meaningfulness of interactions with faculty in their online course(s), and do perceptions vary based on Pell eligibility?

2. What is the relationship between perceptions of interaction with faculty (frequency and meaningfulness) and grades, taking into account student Pell eligibility?
3. To what extent do students perceive that the interaction with faculty in online courses is similar in quality and frequency of interaction to face-to-face courses?

The investigation of the association between the perceptions and student course outcome allowed the researcher to infer if the perceptions have a relationship with the success in the course. The data analysis approach for each research question is shown in Table 1. The analyses employed for the first research question were descriptive and inferential statistics to understand the nature of interactions and whether they vary based on students' Pell eligibility status. For research question 2, I utilized logistic regression to determine whether expected grade category is dependent on perceptions among each student group, Pell-eligible and non-Pell-eligible. For the third research question, I utilized content analysis to understand students' perceptions of how interactions with faculty differ in online versus face-to-face courses.

Table 1

Data Analysis Approach by Research Question

Research Question	Variables	Analysis Approach
1). How do community college students perceive the frequency and meaningfulness of interactions with faculty in online courses?	Frequency of interaction Satisfaction with frequency Positive nature of interaction By type (online discussion, email, in person, phone/video) • Frequency • Who initiated (student; instructor; both) • Nature of interaction (coding and counting of open-ended responses	Descriptive statistics: Frequencies and percentages

Do overall perceptions vary based on Pell eligibility?	Independent: Pell eligibility (yes/no) Dependent: Frequency of interaction (never, once, 2-3 times, 4-5 times, more than 5 times) • Satisfaction with frequency (four-point agreement scale) • Positive nature of interaction (3 items; four point agreement scale)	Pearson's Chi-square test comparisons to determine if frequency and perceptions are dependent on Pell eligibility
2. What is the relationship between perceptions of instructor presence, and expected course grades, taking into account Pell eligibility?	For Pell eligible and non-Pell eligible students separately Independent: satisfaction with frequency of interaction (4 point); perception of instructor presence (4 point); perception of meaningfulness of interactions for learning (4 point) Dependent: expected grades (A/B, or C/D/F/W)	Logistic regression to determine whether expected grade category is dependent on perceptions among each student group • Pell eligible students • Non Pell eligible students
3. How do students perceive the interaction with faculty in online courses compared to interactions in face-to-face courses?	Open-ended item: In your experience at this college, how does interaction with instructors differ with online versus face-to-face courses? Please elaborate and provide examples below.	Van Manan's Interpretive Approach

Setting

The setting for the study was in the state of North Carolina at a mid-sized community college. The North Carolina Community College system (NCCCS) contains 58 community colleges, with an 2017-18 enrollment of nearly 300,000 students, nearly 25,000 of those enrolled in a fully online course schedule. The institution in North Carolina at which I chose to complete my study is a medium-sized urban community college located in the central northern part of North Carolina. While this site was chosen partially out of convenience, it is a representative site

to investigate the perceptions of low-income community college students. Historically this college has had the lowest tuition in the southeast region of the United States, and one of the lowest in the nation.

This college, referred to by the pseudonym Mid-sized Community College (MSCC), serves a large county region with an estimated population of 533,670 people (USCB, 2018). The median age is 34.2 for males and 36 for females. In 2018, the county was predominantly White (56%), Black (35%), and Other (9%). The percentage of people living in poverty in this particular county is approximately 14.5%, which is slightly lower than the average poverty rate of the state (14.7%) but higher than the national poverty rate (11.8%). MSCC closely mirrors the demographics of its county with a 2018-2019 study body consisting of 36.9% Black or African American, 40.4% White; 57.9% Female and 42.1% Male (College, 2019). The average age at MSCC is 25.1.

MSCC is an accredited two-year community college accredited by the Southern Association of Colleges and Schools. MSCC offers certificates, one-year and two-year career-related programs, a two-year college transfer program, personal enrichment courses, a variety of adult education opportunities and training for business and industry). Distance learning started in 1999 at MSCC, with about 60 online classes. In the Fall 2019 semester, the college offered 490 online course sections and there were nearly 5,000 students enrolled in at least one online section.

At MSCC, the Pell grant is critical to helping low-income families afford college costs and half of all Pell recipients nationwide attend community colleges (Yuen, 2019). In the State of North Carolina, 53% of first-time curriculum (non-high school) community college students received a Pell Grant in fall 2017 (NCCCS, 2019). Proportions of Pell recipients were

significantly higher among Black women (79%) and men (69%) across NCCCS. At MSCC, the total percentage of students receiving a Pell grant is slightly higher than the state average, at 56%; similarly, enrollment of minority racial/ethnic groups at MSCC is 48% (majority Black), significantly higher than the state average of 38%. When looking at proportion of Pell recipients among specific groups, the highest percentages at MSCC were for Black women (87%) and men (76%), and Hispanic women (66%) and men (64%). The proportions receiving Pell grants among White students were significantly lower for women (53%) and men (37%)

Participants and Sampling

The target population for this study was North Carolina community college students enrolled in online gateway courses. Gateway courses are typically college credit-bearing introductory or core courses, and were defined in this study as 1) foundational, 2) high-risk, and 3) high-enrollment courses, (Koch & Rodier, 2014). High risk was determined by the D, F, and W (withdrawal) rates across all sections of a course and are needed by a large percentage of students in order to progress to the next level courses in their program of study. The following six courses have been identified by MSCC as Gateway Courses:

English (Introduction)

Computers (Introduction)

College level math (Introduction)

Statistics 1

Precalculus Algebra

Psychology (Introduction)

Recruitment

The sampling frame for the study was all students who met the criteria for the study, which was enrollment in at least one online and one face-to-face course in the Spring 2020 semester. Midway through the Spring semester, through the College's Institutional Research Office, students were sent emails asking for their participation in the survey (Appendix B). The IR office was able to identify 188 currently enrolled students who were taking one of the targeted gateway courses online and at least one course originally scheduled as face-to-face. Although this first round of invitations to participate went out after Covid-19 forced all classes online, students were asked to answer questions for gateway courses that were online prior to Covid-19 forcing all classes online.

The survey was left open for ten days and then another email reminder (Appendix C) was sent to the list of potential students minus those students who had already completed the survey. The survey received a low number of responses (n-=43) through this initial email campaign. Towards the end of the spring semester and consultation with my dissertation advisor and methodologist, I decided to modify the recruitment strategy to increase sample size.

This time, survey invitations were sent via text message (Appendix D). In working with the IR office, we gathered a new list of students that included students who were enrolled in at least one online course in the Fall 2019 semester to be included with the list of invitees who were enrolled in the Spring 2020. The IR staff person removed the names of those students who responded to the survey via the first attempt. Once we had this new expanded list of students to invite, we used the college's text messaging system to check the list against all students who had opted into receiving text messages from the college. A total of 4,626 students meeting the criteria were invited to participate via text message.

Sample

While 1,169 students clicked on the link to enter the survey, only 136 completed all or almost all of the questions. The completed usable responses comprised 3% of those who were sent the survey. This low response rate could be partially explained by the timing of data collection (early stages of the pandemic) with students overwhelmed by abrupt changes in their studies and personal lives. A detailed description of the participant demographics is shown in Table 2. The percentage of students who reported that they were Pell recipients (61%) and identified as a minority race/ethnic group (55.1%) are similar to the populations at both MSCC and the State of North Carolina, yet slightly higher.

Table 2

Demographic characteristics for study sample (n=136)

Variable	Categories	Number of respondents	% of Respondents
Gateway Course Name	General Psychology	29	21.3%
	Writing and Inquiry	18	13.2%
	Quantitative Literacy	9	6.6%
	Statistical Methods 1	3	2.2%
	Precalculus Algebra	2	1.5%
	Introduction to Computers	22	16.2%
	Non-Gateway	53	39.0%
Pell eligibility	Pell	83	61.0%
	Non-Pell	48	35.3%
Race/ethnicity	Asian	9	6.6%
	Black or African American	43	31.6%
	Hispanic	12	8.8%
	White	55	40.4%
	Other Race	11	8.1%
Gender	Cisgender woman	105	77.2%
	Cisgender man	24	17.6%
	Gender non-binary	1	0.7%
	Another gender identity	1	0.7%
Expected Grade	A	74	54.4%
	B	34	25%
	C	18	13.2%
	D	1	0.7%
	F	3	2.2%
	W	6	4.4%

Instrumentation and Variables

I chose a survey design in order to gather both quantitative (closed-ended) and qualitative (open-ended) responses from students to better understand student perceptions of interactions with faculty in online courses. A survey design with an open textbox allowed for both understanding the relationship among variables and the ability to explore the topic in more depth (Creswell, 2013).

Instrument

A survey questionnaire was selected as the instrument to collect data; however, to gather richer data, I included one open-ended question with a text box for students to expound on their experiences. This combination of two types of survey questions was utilized to describe community college student perceptions of faculty-student interactions in online courses. The full instrument is shown in Appendix E.

The survey included 38 questions. There was no existing instrument that adequately addressed the questions for my study, thus, I developed the questions in consultation with my dissertation advisor and methodologist. The quantitative portion of the survey comprised most of the items. The initial question determined the online course (one of the six gateway courses or a non-gateway course) that the student was referring to when answering questions about interactions with the online course instructor. This was followed by three questions about the perceived engagement of self and instructor, and expected course grade. The next sets of questions were about the frequency and nature of one-to-one interactions with the instructor. The survey included a single open-ended question asking students to comment on the differences between interaction with instructors in face-to-face and online courses. The final section of the survey included demographic questions about Pell Grant eligibility, gender identity, age, and racial/ethnic identity.

Variables

Frequency, satisfaction, and nature of interactions with faculty in online courses were examined as dependent variables in RQ1 and as independent variables in RQ2. Table 3 shows the variable names, item wording, and research question alignment for each variable as presented in the survey instrument (Appendix E).

Table 3

Variables, item wording, and research question alignment

Variable	Item wording	RQ
Frequency of interaction overall	How many times have you interacted one-to-one with this instructor this semester, no matter the type of interaction (e.g., email, phone/video, in person, online posts/chats)? (Never, once, 2-3 times, 4-5 times, more than 5 times)	1 (dependent) 2 (independent)
Frequency of interaction by interaction type	Particular types of interactions (online discussion forum, email, face-to-face, phone/video) (never, once, more than once)	1 (dependent)
Initiator of interaction by interaction type	Particular types of interactions (online discussion forum, email, face-to-face, phone/video) (instructor, student, both)	1 (dependent)
Satisfaction with frequency overall	I am satisfied with the amount of interaction I've had with the instructor. (strongly agree, agree, disagree, strongly disagree)	1 (dependent) 2 (independent)
Nature of interaction (positive, meaningful, rapport), overall and by interaction type	Overall and for each interaction type: The interactions I've had …are positive and supportive … were meaningful to my learning of the course material … helped to build a rapport/relationship with my instructor (strongly agree, agree, disagree, strongly disagree)	1 (dependent) 2 (independent-overall only)
Perceptions of presence overall	The instructor seems present and engaged in this online course. I feel present and engaged in this course. (strongly agree, agree, disagree, strongly disagree)	1 (dependent) 2 (independent)
Pell eligibility	Are you eligible for a Pell grant based on your FAFSA, even if you are not currently receiving the grant? (yes, no)	1 (independent) 2 (groups)
Expected grade	What final grade do you expect in this online course? (A, B, C, D, F, W – converted to 2 categories (A/B and C/D/F/W)	2 (dependent)

Items about the frequency of interactions included categories to assess the number of times students interacted overall and by different interaction types. Perceptions of satisfaction, nature of interaction, and course presence (student and instructor) used four-point agreement scales (strongly agree to strongly disagree). The self-reported Pell grant status of the students was reported as yes or no, and used to compare perceptions in RQ1 and to group the students for RQ2. Pell eligibility served as a proxy for socioeconomic status, assuming that Pell eligible students represent students from lower-income households. Expected grade was the dependent variable for RQ2 and grouped into two categories for analysis: A and B were considered being successful in the course, while C, D, F, W grade were considered less successful outcomes in the course.

Data Collection Procedure

Prior to conducting the study, I obtained permission from the Institutional Review Board (IRB). As described in the study recruitment section, the recruitment occurred in two waves. In the first wave, students who were enrolled in a combination of at least one online course and at least one face-to-face course in Spring 2020 received an invitation to participate via email from the MSCC Institutional Research office in March 2020. Two separate follow-up messages (after 5 and 10 days, respectively) were sent reminding students that they must complete the survey by the deadline. As a result of the email invitation and follow-ups, only 43 students participated. The second wave of recruitment involved sending the invitation in a text message format to a broader group of students, including those who completed a face-to-face course in Fall 2019. This addition was approved by the IRB. Late in May 2020, the survey was sent to 4,626 students who opted into receiving text messages and who qualified based on the study's criteria.

The initial screen in the online survey included a consent form (Appendix A) which required students to agree to enter the survey. Several steps were taken to ensure confidentiality in the study. Data was collected using a firewall protected web-based survey. The survey results were kept by the college's IR office, and the researcher only received raw data with randomly assigned dummy identification numbers. Only the IR office on the college campus had access to the documents containing identifiers. All electronic data files were housed on password-protected drives and computers. Lastly, the methods and lengths taken to ensure confidentiality were clearly communicated with all the participants prior to any data being collected.

Data Analysis

The Microsoft Excel data file prepared by the MSCC IR office was exported into IBM SPSS and checked for errors. The data file was cleaned to remove empty cases, cases where respondent had consented but then provided no data, and cases with a substantial amount of missing data on the variables of interest. The final analytic sample included 136 responses.

The data analysis approach for each research question is shown in Table 1, earlier in Chapter 3. For RQ1, the ordinal nature of the data required the use of frequencies and percentages to describe participant responses. To examine whether perceptions were dependent on Pell eligibility, Pearson's Chi square was appropriate given that both variables (Pell eligibility and perceptions) were categorical in nature. For RQ2, a logistic regression was used to determine whether more positive perceptions of interaction increased the likelihood of expecting a passing grade in the course. A regression was conducted separately for Pell eligible and non-eligible students to understand the relationship of perceptions to expected course success among each group.

The data source for RQ3 was the open-ended question asking students to comment on differences between interaction with instructors in face-to-face and online courses. Qualitative analysis is based on the belief that knowledge is constructed by people in an ongoing fashion as they engage in and make meaning of an activity, experience, or phenomenon (Merriam & Tisdell, 2016). For analysis of the open-ended responses, Max van Manen's (2016) Interpretive Approach fits my desire to study students' lived experience. Vagle (2018) outlined why one should use the Interpretive Approach of Van Manen: (a) the researcher must choose a topic of sincere interest; and (b) the researcher must be able to describe the experience based on a lived experience and be thoughtfully engaged with the phenomenon (Vagle, 2018). Van Manen's (19 97) conception of phenomenological research is based on hermeneutic phenomenology and defines phenomenology as "pure description of lived experience" (van Manen, 1997, p. 25). Open and axial coding methods were used in the development of themes that emerged from the data. In other words, the meaning was already in the data, and I performed open coding to create codes. and axial coding eventually produced the themes that ultimately spoke to the meaning and the story of the research.

Researcher's Stance

Merriam and Tisdell (2009) established the importance of "reflecting critically on the self as a researcher" (p. 219). I describe my stance in this chapter to allow the reader to understand how it might affect my interpretation of the data. In my position at a large community college in a mid-sized city, I have the pleasure of working with a population of students who work hard to improve their lives for themselves and their families. Almost 65% of the students at this college are eligible for Pell grants. At different points throughout my research and developing my study, I could feel the power and the privilege I possess: my whiteness, socioeconomic status into

which I was born, and the opportunity to complete a doctorate. While I have worked hard to get to this point, many Americans cannot participate in education at this level. This work reminds me that as Fontana and Frey (2005) wrote, research is unavoidably, historically, politically and contextually bound and you cannot escape it and cannot be completely neutral and separated from your cultural background. The relationship between my survey respondents and me reflects the history and culture in which we live and the power and privilege relationship of the haves and the have-nots.

My research interest centers on the success of low-income students with the intent of improving their rate of success in college; still one of the best ways to raise oneself out of poverty. Researching this topic is much different from living and working to affect the lives of others. “Be careful what you wish for” I guess. My decision to enter into a doctoral program has given me the vehicle to develop and enact change for students I touch in my work. One major influential event in my life that awakens my sense of privilege is my time mentoring three high school girls at a high school in Charlotte, North Carolina. This high school has the highest dropout rate in the state. This experience was eye-opening because of the conversations I had with my mentees. These conversations confirmed that a vast amount of work must be done for those who want to get a postsecondary education but who are hampered by their low-income status.

In summary, one of the assumptions of qualitative research is that the person conducting the research is the instrument (Pezalla et al., 2012). As such, the researcher brings a certain perspective that is the product of his or her evolution as a person. This study allowed me to examined my evolution as a researcher from my professional and experiential perspectives and from my understanding of the current literature.

Summary

The chapter provided an explanation of the research methodology utilized for the research study. The study was designed to gage the perceived frequency and meaningfulness of faculty interactions in online courses. Further, the study sought to discover whether a student's Pell-eligibility status had any effect on their perceptions of interactions and did the perceived frequency and satisfaction with the frequency of interactions as well as the meaningfulness of the interactions have an effect on the student's grades/success in the course? Chapter Four presents the findings. The findings of this study will inform the development of programs, policies, practices provided by community college faculty, administrators, and staff for the purpose of increasing student academic success and persistence in online courses. The findings help gain a better understanding of how to meet the needs of all students and further the equitable outcomes across socioeconomic statuses.

CHAPTER 4: FINDINGS

Chapter 4 presents the results of the findings within the study. This research study used a survey design study approach. Research questions 1 and 2 utilized Likert scale type questions while Research Question 3 utilized an open-ended question. The use of a survey design was beneficial because the researcher could further analyze the quantitative data by examining student responses to an open-ended question. The purpose of this study was to explore how perceptions of faculty interaction are related to socioeconomic status and low-income student success among community college students in online courses in the southeast. The research questions addressed were:

1. How do community college students perceive the frequency and meaningfulness of interactions with faculty in online courses, and do those perceptions vary based on Pell eligibility?
2. What is the relationship between perceptions of interaction with faculty (frequency and meaningfulness) and course grades, taking into account Pell eligibility?
3. To what extent do students perceive the interaction with faculty in online courses to be similar in quality and frequency to those interactions in face-to-face courses?

A null hypothesis was developed,

H_0: Pell Eligibility has no relationship on the perceptions of students related to their interactions with online faculty.

To answer these research questions a survey was created and administered to students via web and text. The survey contains thirty-seven questions. Chapter Four presents findings from data collected through the survey, which was delivered in late Spring, 2020 to community college students. Major themes constructed from the analysis of the open-ended questions are

presented, including representative quotes from participants to illustrate participant perceptions of the differences between online interactions and face-to-face interactions from their own voice.

Data Presentation

Data is presented within chapter four as text, and as numerical information within tables formatted according to the Publication Manual of the American Psychological Association (2021). The order of presentation follows the order of the research questions in this study.

Demographic Information

Five demographic characteristics were gathered from the sample. The following are highlights extracted from the data collected. The survey was sent to 4,626 eligible students and the resulting usable data from the survey includes 136 students. 95 students responded to the open-ended question to provide for a qualitative analysis; this accounted for 70% of the study respondents. Demographic information gathered for this study included information about the student including age, race/ethnicity (primary and other), gender and the type of course the student was enrolled in and was thinking about when answering the survey questions.

A quantitative descriptive analysis was conducted on the categorical variables that describe the characteristics of the students involved in this study. The majority of respondents were those who identified as cisgender woman (*n=105, 77.2%)*; White (*n=55, 40.4%)* and Pell-eligible (*n=59, 60.2%)*. The next most common response to the Race/ethnicity question was *(n=43, 31.6%)* is African American/Black and finally 8.8% Hispanic. When answering about their anticipated grade in the course, (n=74, 54.4%) of students anticipated an "A" in the course.

Comparing this to the actual MSCC enrollment, many more women than men participated in the survey. Women at MSCC actually only make up about 58% of the student body in 2019, whereas 71% of survey participants identified as cisgender woman. The

race/ethnicity makeup of survey participants was about the same because the percentage of actual student enrollment at MSCC is 37% identifying at African American or Black, 41% identifying at White and 9% Hispanic. In terms of Pell-eligibility, in the 2018-2019 school year, it was reported that 59% of students received a Pell grant and that compares well to the participant self-reporting that 61% received a Pell grant. The demographic makeup of the sample is relatively close to the population of the community college.

The disaggregation of the type of course in which the student was enrolled, the majority of students indicated that they were taking a Gateway course *(n=83, 61%)*. Fewer students indicated enrollment in a course that was not a Gateway course *(n=53, 39%)*. Within the category of Gateway Courses, students who responded were most likely to respond that they were in the General Psychology course *(n=29, 21.3%)*, and Introduction to Computers, another Gateway Course, as the second most frequent response *(n=22, 16.2%)*.

Findings

Perceptions of Frequency and Meaningfulness of Interactions

- Frequency of overall interactions (Table 3): For both course types, the majority (over 80%) had interacted with the instructor at least once. More specifically, the majority of students answered that they interacted 2 or more times with their instructor and Non-Gateway students were more likely to have interacted more than 5 times with instructors (32.1%) than Gateway students (16.9%). More students in Gateway courses, *(n= 25, 30.1%)* than non-Gateway courses *(n=10, 18.8%)* answered, “never” or only “once” to the question regarding how many times they interacted with their online instructor during the term. For Gateway students, nearly 17% of students reported “never” interacting with their instructor.

Table 4

Frequency of One-On-One Interactions with Instructor, by Course Type (n=136)

Type of one-on-one interaction	Course type	Never	Once	2-3 times	4-5 times	> 5 times
Any type	Gateway (n=83)	14 (16.9%)	11 (13.3%)	31 (37.3%)	13 (15.7%)	14 (16.9%)
	Non-gateway (n=53)	5 (9.4%)	5 (9.4%)	20 (37.7%)	6 (11.3%)	17 (32.1%)

- Satisfaction with frequency of interactions (Table 4): The majority of students indicated that they were satisfied with the amount of interaction they had with their instructor. Approximately, 84% of students in Gateway courses and 88% of students in Non-Gateway courses either agreed or strongly agreed that they were satisfied with the frequency of interactions. While this is a high level of satisfaction, it is important to note that over 10% of students disagreed or strongly disagreed that they were satisfied with the amount of interaction.

Table 5

Overall Satisfaction with Frequency and Nature of Interactions, by Course Type (n=116)

Perception of interaction	Course type	Strongly Agree	Agree	Disagree	Strongly Disagree
I am satisfied with the amount of interaction I've had with the instructor	Gateway (n=68)	37 (54.4%)	20 (29.4%)	10 (14.7%)	1 (1.5%)
	Non-gateway (n=48)	20 (41.7%)	22 (45.8%)	2 (4.2%)	4 (8.3%)
The interactions I've had were positive and supportive	Gateway (n=65)	41 (63.1%)	21 (32.3%)	3 (4.6%)	0 (0%)
	Non-gateway (n=47)	22 (47%)	18 (38.3%)	5 (1.1%)	2 (4.3%)
The interactions I've had were meaningful to my learning of the course material	Gateway (n=66)	34 (51.5%)	27 (40.9%)	4 (6.1%)	1 (1.5%)
	Non-gateway (n=48)	19 (39.6%)	23 (47.9%)	4 (8.3%)	2 (4.2%)
	Gateway (n=67)	28 (41.8%)	27 (40.3%)	8 (11.9%)	4 (6%)

The interactions have helped to build a rapport/relationship with my instructor	Non-gateway (n=45)	19 (42.2%)	18 (40%)	4 (8.9%)	4 (8.9%)

- Nature of interactions (Table 4): 95% of the students in Gateway courses responded by either agreeing or strongly agreeing that the interactions they had with their instructor were positive and supportive. A small percentage of students but still a strong agreement of approximately 82% of students enrolled in Gateway courses perceived that interactions helped to build a rapport with the instructor.

Table 6

Perceptions of Engagement in Course, by Course Type (n=136)

Engaged and present in course	Course type	Strongly Agree	Agree	Disagree	Strongly Disagree
Instructor	Gateway	47	27	6	2
	(n=82)	(57.3%)	(32.9%)	(7.3%)	(2.4%)
	Non-gateway	22	26	3	2
	(n=53)	(41.5%)	(49.1%)	(5.7%)	(3.8%)
Student (self)	Gateway	35	29	9	6
	(n=79)	(44.3%)	(36.7%)	(11.4%)	(7.6%)
	Non-gateway	21	25	4	2
	(n=52)	(40.4%)	(48.1%)	(7.7%)	(3.8%)

- Perceptions of instructor and own engagement (Table 5): The majority of students agreed that both they and their instructor were present and engaged in the course. Students were slightly less positive about their own level of presence and engagement in the course compared to their perceptions of the instructor's presence and engagement. This perception of less engagement was more pronounced among students in Gateway courses because while about 90% of students in both groups perceived their instructor as present and engaged, 81% of Gateway students (compared to 88% of non-Gateway students) reported positively on their own presence and engagement.

Table 7

Frequency of Different Types of Interactions, by Course Type

Type of one-on-one interaction	Course type	Never	Once	More than once
Individual discussion posts (n=136)	Gateway (n=83)	17 (20.5%)	17 (20.5%)	49 (59%)
	Non-gateway (n=53)	16 (30.2%)	12 (22.6%)	25 (47.2%)
Email (n=136)	Gateway (n=83)	12 (14.5%)	18 (21.7%)	53 (63.9%)
	Non-gateway (n=53)	5 (9.4%)	6 (11.3%)	42 (79.2%)
Face-to-face (n=136)	Gateway (n=83)	62 (74.7%)	12 (14.5%)	9 (10.8%)
	Non-gateway (n=53)	29 (54.7%)	10 (18.9%)	14 (26.4%)
Phone/video (n=136)	Gateway (n=83)	73 (88%)	4 (4.8%)	6 (7.2%)
	Non-gateway (n=53)	34 (64.2%)	5 (9.4%)	14 (26.4%)

- Frequency of different types of interactions (Table 6): Most students indicated that they never interacted with their instructor via face-to-face and phone/video. Students in Gateway courses reported less frequent interaction than non-Gateway students for all interaction types. Specifically, 88% of Gateway students and 64% of non-Gateway students indicated that they never interacted with their instructor by phone or video. Approximately 75% Gateway and 55% of non-Gateway students never interacted face-to-face with their instructor.

Table 8

Initiator of Different Types of Interactions, by Course Type

Type of one-on-one interaction	Course type	Instructor	Student	Both
Email (n=136)	Gateway (n=71)	2 (2.8%)	31 (43.7%)	38 (53.5%)
	Non-gateway (n=48)	4 (8%)	24 (50%)	20 (42%)
Face-to-face (n=136)	Gateway (n=21)	4 (19%)	9 (42.9%)	8 (38.1%)
	Non-gateway (n=24)	4 (33.3%)	5 (20.8%)	15 (62.5%)
Phone/video (n=136)	Gateway (n=10)	3 (30%)	5 (50%)	2 (20%)
	Non-gateway (n=19)	8 (42.1%)	1 (5.3%)	10 (52.6%)

The results in Tables 8-11 pertain only to students who reported having interactions with their instructor.

- Initiation of different types of interactions (Table 7): The most frequent response for initiation of interactions of all types (email, phone and face-to-face) was that both students and instructors were initiators of the interactions. However, Gateway students reported themselves as the most frequent initiators of face-to-face interactions. Within the non-Gateway student responses, 50% responded that they were the initiators for email interactions with instructors.

Table 9

Agreement that Interaction was Positive and Supportive, by Type of Interaction and Course Type

Type of one-on-one interaction	Course type	Strongly agree	Agree	Disagree	Strongly disagree
Individual discussion posts (n=135)	Gateway (n=65)	38 (58.5%)	23 (35.4%)	3 (4.6%)	1 (1.5%)
	Non-gateway (n=37)	21 (56.8%)	14 (37.8%)	2 (5.4%)	0 (0%)
Email (n=133)	Gateway (n=68)	39 (57.4%)	24 (35.3%)	3 (4.4%)	2 (2.9%)
	Non-gateway (n=48)	23 (47.9%)	21 (43.7%)	2 (4.2%)	2 (4.2%)
Face-to-face (n=135)	Gateway (n=21)	12 (57.1%)	7 (33.3%)	2 (9.5%)	0 (0%)
	Non-gateway (n=23)	13 (56.5%)	9 (39.1%)	1 (4.3%)	0 (0%)
Phone/video (n=135)	Gateway (n=9)	2 (22.2%)	6 (66.7%)	1 (11.1%)	0 (0%)
	Non-gateway (n=19)	10 (52.6%)	8 (42.1%)	1 (5.3%)	0 (0%)

- Perceptions of supportive and positive interactions (Table 8): Overall, a significant majority (90-95%) of students who interacted with instructors agreed that those interactions were supportive and positive, across all interaction types. There were some small variations by interaction type and course type, but no dramatic differences.

Table 10

Agreement that Interaction was Meaningful to Learning, by Type of Interaction and Course Type

Type of one-on-one interaction	Course type	Strongly agree	Agree	Disagree	Strongly disagree
Individual discussion posts (n=133)	Gateway (n=63)	36 (57.1%)	22 (34.9%)	3 (4.8%)	2 (3.2%)
	Non-gateway (n=37)	21 (56.8%)	14 (37.8%)	2 (5.4%)	0 (0%)
Email (n=132)	Gateway (n=67)	34 (50.7%)	28 (41.8%)	2 (3%)	3 (4.5%)

	Non-gateway (n=48)	26 (54.2%)	19 (40%)	2 (4.2%)	1 (2.1%)
Face-to-face (n=136)	Gateway (n=21)	12 (57.1%)	8 (38%)	1 (5%)	0 (0%)
	Non-gateway (n=24)	14 (58.3%)	9 (38%)	1 (4.2%)	0 (0%)
Phone/video (n=134)	Gateway (n=9)	2 (22.2%)	5 (55.6%)	2 (22.2%)	0 (0%)
	Non-gateway (n=18)	11 (61.1%)	6 (33.3%)	1 (5.6%)	0 (0%)

- Perceptions of meaningful interactions (Table 9): For the most part, students were positive about their perceptions of the meaningfulness of interactions regardless of the course type, with 90% or higher agreement. The outlier was the perception of gateway students about the meaningfulness of phone/video interactions, for which 22% disagreed.

Table 11

Agreement that Interaction Helped Build Rapport/Relationship, by Type of Interaction and Course Type

Type of one-on-one interaction	Course type	Strongly agree	Agree	Disagree	Strongly disagree
Individual discussion posts (n=101)	Gateway (n=64)	31 (48.4%)	23 (36%)	8 (12.5%)	2 (3.1%)
	Non-gateway (n=37)	20 (54%)	14 (38%)	3 (8%)	0 (0%)
Email (n=116)	Gateway (n=68)	31 (45.6%)	30 (44.1%)	4 (5.9%)	3 (4.4%)
	Non-gateway (n=48)	21 (43.8%)	21 (43.8%)	3 (6.2%)	3 (6.2%)
Face-to-face (n=44)	Gateway (n=21)	9 (42.9%)	10 (47.6%)	2 (9.5%)	0 (0%)
	Non-gateway (n=23)	12 (52.2%)	9 (39.1%)	2 (8.7%)	0 (0%)
Phone/video (n=28)	Gateway (n=9)	2 (22.2%)	5 (55.6%)	2 (22.2%)	0 (0%)
	Non-gateway (n=19)	9 (47.4%)	9 (47.4%)	1 (5.3%)	0 (0%)

- Perceptions of interactions that build rapport (Table 10): Students expressed fairly strong agreement that each type of interaction helped to build rapport, however Gateway students were slightly less positive about responses to individual discussion posts and phone/video interaction than the other types. Non-Gateway students were less positive about the rapport built during email interaction than the other types of interaction.

Relationship of Pell Eligibility with Perceptions of Interactions and Success

To complete the analysis for Research Question 1, the researcher examined the relationship between Pell eligibility and students' frequency of interactions, perceptions of presence, and engagement. These cross-tabulations are shown in tables 12-14, and the results of the chi-square tests of independence for each are shown in Table 13.

Table 12

Frequency of One-On-One Interactions with Instructor, by Pell Eligibility (n=131)

Type of one-on-one interaction	Pell eligibility	Never	Once	2-3 times	4-5 times	> 5 times
Any type	Yes (n=83)	11 (13.2%)	9 (10.8%)	31 (37.3%)	10 (12%)	22 (26.5%)
	No (n=48)	6 (12.5%)	7 (14.5%)	18 (37.5%)	8 (16.7%)	9 (18.8%)
	Total	17	16	49	18	31

As seen in Table 11, the distribution of frequency of interaction looks quite similar for the two groups. A similar percentage (12-13%) indicated never having a one-on-one interaction with their course instructor. The most variation between the two groups is for higher frequency of interaction. Approximately 39% of Pell eligible students indicated interacting 4 or more times, while 35% of non-Pell eligible students indicated interacting four or more times.

Table 13

Overall Satisfaction with Frequency and Nature of Interactions, by Pell Eligibility

Perception of interaction	Pell eligibility	Strongly Agree	Agree	Disagree	Strongly Disagree
Instructor is present and engaged	yes	47 (56.6%)	29 (34.9%)	5 (6.0%)	2 (2.4%)
	no	21 (44.7%)	23 (48.9%)	3 (6.4%)	0 (0%)
I am present and engaged	yes	35 (43.8%)	32 (40%)	8 (10.9%)	5 (6.3%)
	no	20 (42.5%)	21 (44.6%)	4 (.08%)	2 (.04%)
I am satisfied with the amount of interaction I've had with the instructor	yes	44 (53%)	27 (32.5%)	9 (10.8%)	3 (3.6%)
	no	19 (40.4%)	21 (44.7%)	4 (8.5%)	3 (6.4%)
The interactions I've had were positive and supportive	yes	45 (57%)	26 (32.9%)	5 (6.3%)	3 (3.8%)
	no	23 (50%)	17 (37%)	4 (8.6%)	2 (4.3%)
The interactions I've had were meaningful to my learning of the course material	yes	40 (49.4%)	32 (39.5%)	5 (6.2%)	4 (4.9%)
	no	18 (39.1%)	22 (48%)	4 (8.7%)	2 (4.3%)
The interactions have helped to build a rapport/relationship with my instructor	yes	34 (43.6%)	30 (38.5%)	8 (10.3%)	6 (7.7%)
	no	18 (38.3%)	20 (42.5%)	5 (10.6%)	4 (8.5%)

As seen in Table 12, Pell-eligible and non-Pell eligible students were similarly satisfied with regard to the nature of their interactions with the course instructor, in all cases with 80% or higher agreement.

Table 14

Frequency of Different Types of Interactions, by Pell Eligibility

Type of one-on-one interaction	Pell eligibility	Never	Once	More than once
Individual discussion posts (n=131)	Pell (n=83)	21 (25%)	17 (20%)	45 (54%)
	Non (n=48)	9 (19%)	12 (25%)	27 (56%)
Email (n=131)	Pell (n=83)	10 (12%)	12 (14%)	61 (73%)

	Non (n=48)	5 (10%)	10 (21%)	33 (69%)
Face-to-face (n=131)	Pell (n=83)	54 (65%)	15 (18%)	14 (11%)
	Non (n=48)	33 (69%)	7 (15%)	8 (17%)
Phone/video (n=131)	Pell (n=83)	69 (83%)	6 (7%)	9 (11%)
	Non (n=48)	35 (73%)	2 (4%)	11(23%)

Frequency of interaction looked similar across the student types; however, there were some variations of interest. Pell-eligible students were less likely than non-eligible students to have never interacted by phone or video with the instructor, and to have interaction on individual discussion posts.

Table 15

Chi-square Test of Independence for Perceptions of Interactions and Pell Eligibility

Perceptions	Chi-square (df)	p
Frequency of interaction, any type	1.607 (4)	0.808
Satisfaction with frequency	2.842 (3)	0.417
Support	0.645 (3)	0.886
Rapport	0.349 (3)	0.951
Meaningful	1.438 (3)	0.697
Instructor presence	3.427 (3)	0.33
Student presence	0.448 (3)	0.93
Frequency of response to discussion post	0.873 (2)	.646
Frequency of email interaction	0.902 (2)	.637
Frequency of face-to-face interaction	0.284 (2)	.868
Frequency of phone/video interaction	3.685 (2)	.158

As shown in Table 14, none of the chi-square tests were statistically significant, meaning that none of the perceptions were dependent on Pell eligibility among the students in the sample.

Relationship of Perceived Course Success with Perceptions of Interactions, by Pell Eligibility

Table 15 provides results to answer the second research question, "What is the relationship between perceptions of instructor presence, and expected course grades, taking into account Pell eligibility". Looking at Pell eligible students, none of the perceptions significantly increased likelihood of expecting a higher course grade (A/B) except satisfaction with the amount of interaction with their instructor (exp(B)= 21.037, p<.01). Among Pell-eligible students, satisfaction with the amount of interaction with the instructor significantly increased the likelihood of perceived success in the course.

None of the odds ratios were statistically significant for non-Pell eligible students, suggesting that perceptions of interactions did not significantly increase the likelihood of expecting a higher grade in the course.

Table 16

Logistic Regression Predicting Likelihood of Perceived Success in Course Based on Perceptions of Interactions with Instructor, by Pell Eligibility

Perception of interaction	Pell eligibility	B	S.E.	Wald	df	Sig	Exp(B)
Instructor is present and	yes	-0.712%	0.678	1.102	1	0.294	0.491
engaged	no	0.895%	1.447	.382	1	0.536	2.447
Satisfied with amount of	yes	3.046%	1.006	9.161	1	0.002	21.037
interaction with instructor	no	-1.464%	0.968	2.288	1	0.130	0.231
Interactions meaningful to	yes	1.378%	0.890	2.398	1	0.121	0.252
my learning	no	0.554	0.808	0.470	1	0.493	1.740
Constant	yes						
	no						

Perceptions of Interactions in Online versus On Campus Courses

The next set of data (Table 16 & Table 17) refer to the findings related to Research Question 3: How do students perceive the interaction with faculty in online courses compared to

interactions in face-to-face courses? These findings from data collected through the open-ended question allowed students to elaborate on their perceptions. 60% of the students who responded to the open-ended question were Pell-eligible students; 78% were Cisgender woman and 30.1% were African American/Black. The researcher was able to capture the perception of participants in their own words as they lived them in their online course. Though the responses were generally short statements, the data illustrate participants' experiences from their own voice. While the experiences of each participant varied, three observations emerged from the analysis of the data that explains the differences in perceptions.

Table 17

Summary of Qualitative Findings

Research Question	Themes	Subthemes
RQ3. Perceptions of how online interactions differ from interactions in face-to-face classes.	Response Time	● Quicker supports more meaningful interaction ● Longer wait time makes it more difficult to learn; sense of teaching oneself
	Seeing & Hearing for more meaningful interactions	● If a student can "see" or "hear" the instructor during the interaction there is an impression that the interactions are more personal and more meaningful.
	Depends on the Instructor	● Depends on Instructor attributes and style.

Table 18

Major Themes from Student Perceptions of Online v. Face-to-Face Faculty Interactions (n=57)

Difference	Frequency
Response rate - a faster response rate in an online course makes the interactions more meaningful	26
Seeing and hearing the instructor in a classroom promotes a rapport/relationship with the instructor and enhances learning in an online course	17
Instructor style	16

The first observation that emerged is the perception regarding response time. Twenty-six students wrote about response time being a factor when thinking about the quality of interactions. Response time is one of the major differences students pointed to in terms of online versus face-to-face interactions with faculty. To these students, meaningful interaction is a function of response time. A quicker response time in online courses supported meaningful learning and/or helped to build a rapport or relationship with the instructor. Examples from the text responses of this theme are, "*Quicker responses with face to face and more helpful"* and *"psych instructor good, responded promptly" and "Interaction is better in a face-to-face course because most questions could be answered right away"* and *"Online it is harder and it takes more time to get questions answered rather than face to face"*. The literature explains to the reader that student-faculty interactions are critical but it is not just the act of responding, it is also the quality and robustness of the feedback (Cavalcanti et al., 2019), the encouragement provided and the response time. If a student were to post something in a discussion forum and it took the

faculty member a few weeks to respond, the feedback would be less relevant to the student's learning. The literature also states that interactions must be frequent (Protopsaltis & Baum, 2019; Jaggars & Xu, 2011) because responding within a short time frame allows for more frequent and subsequent interactions throughout the semester. Interactions are not as meaningful when it takes several days for the instructor to respond. One student succinctly wrote, "*Online you will have to wait for the instructor to respond back verses if it was face-to-face you could get your answer immediately*". The response time plays a significant role in students' perceptions of the meaningfulness of the interaction as well as plays a role in drawing a clear line between self-learning and education. A slow response time is also a major determinant of student participation in and commitment to their own learning and satisfaction with teaching and learning. (Jaggars & Xu, 2016, 2011).

The next theme identified is the supposition that some students want to see and hear their instructor. Seventeen students described their interactions by using the terms "seeing" and "hearing". There were comments like, "*I like to "see" my instructor";* and *"get a better understanding when I can "see"; and "The difference is that I get to see my instructors personality (face-to-face) versus being online where I can only read their messages'' and* "*in F2F instructor can see you are upset and tried to work with you" and finally, "Also just miss being able to hear other people's questions and professors answers in real time."* In the Western civilization there maintains certain assumptions about students, their technology skills and desire to use the internet in all areas of life. Education remains an area in which many learn visually and need the community and personal interactions. The continuous use of email, discussion boards, texting without any ability to "see" or "hear" the faculty may actually create a transactional distance between the instructor and student.

The final theme identified is related to instructor style and the perception that the differences that exist between the interactions with online versus face-to-face instructors are a result of the instructor's style or attributes. There were sixteen comments from survey participants related to the various styles of the instructor. Some of those comments are, "*did not have the same level of encouraging interaction, instruction or clarification from the instructor*". Another student added, "*Instructor xxx made it easy to communicate with her and she always responded promptly". "She also reached out to everyone weekly which helped keep everything going smoothly"*. "Some instructor attributes do not make it comfortable for students to reach out"; one student wrote, "*There will be those that you feel comfortable talking to and those you don't".* Some students identified a fear of being the first to make contact with an online instructor. They expressed being shy and weren't comfortable with reaching out first; therefore, the student would not reach out or make contact at all unless the instructor did so first. These comments support the literature's claim that instructor-initiated contact is most successful in online courses (Protopsaltis & Baum, 2019, p. 25). Students need instructors who understand the value of reaching out to students first. When students are afraid of reaching out, their fear or lack of confidence contributes to a feeling of isolation and feeling as though the student was teaching his or herself in online courses.

This theme also relates to the conversation in the literature regarding some online course interactions mirroring the types of interactions seen in the old correspondence school model. In that old model, as a result of mailing course materials off to students while offering little interaction with a knowledge expert, students essentially taught themselves and found themselves failing or becoming frustrated and dropping out (Caruth & Caruth, 2013; Kentnor, 2015; Poulin, 2016).

Summary

Participants in this study were satisfied with the frequency and meaningfulness of the interactions they had with the instructors in their online courses. There were no significant differences in the findings for Pell-eligible participants versus Non-Pell-eligible students at MSCC except that Pell-eligible students were more positive about their expected course grade as their satisfaction with the interaction was more positive. The themes that emerged from the analysis of the open-ended question included response time, “seeing” and “hearing” their instructor, and instructor attributes. Pell-eligible students’ responses focused more frequently on the issue of response time, while the Non-Pell-eligible student responses focused more frequently on the individual instructor attributes.

CHAPTER 5: DISCUSSION

Retention rates and degree completion at community colleges across the United States are low; however, it is an attractive option for low income students starting out in college because of the low tuition rates and flexible format. It remains necessary to continue to look at new ways of understanding academic success and persistence issues at community colleges

This study was conducted to gain a better understanding of the experiences of community college students at Mid-Sized Community College (MSCC), specifically focusing on perceptions of their interactions: the frequency of interactions they had with their instructors and how interactions impacted their perceptions of their academic success. The sample for this survey design research included community college students enrolled in at least one online and one face-to-face course at a mid-sized community college in the southeast.

What was found in this study is that the majority of students were satisfied with the amount and quality of interactions. It was also determined that perceptions of amount and quality did not vary based on the delivery format. Common themes from the literature reviewed highlight the importance of frequent and meaningful faculty interactions to counteract the distance between student and teacher. Common types of interactions studied include email, discussion posts, phone, and face-to-face. Student perceptions regarding the nature of the interactions included the extent to which the student perceived the interaction helped to build a rapport or relationship, if the interactions were positive and supportive, and if the interactions were meaningful to the student's learning.

Overall, the majority of students were more positive than negative about the interactions they had with instructors regardless of their Pell status. When attempting to contextualize their responses to gain a richer understanding of the interactions from a student's point of view, the

researcher found that students' comments appeared more negative than the quantitative survey responses. The identified themes in the qualitative analysis of the data include, "response time", "instructor attributes", and the "ability to see and hear instructors".

This chapter covers a discussion of findings as related to the research questions, the significance of the study for faculty and administrators, along with implications for practice, and recommendations for further research.

RQ1. What are the perceptions of the frequency and meaningfulness of interactions with faculty in online courses, and do the perceptions vary based on Pell eligibility?

Frequency

The first research question explored students' self-reported number of times interacted, whether they were satisfied with the amount of interactions and the types and nature of the interactions. Students in Non-Gateway courses interacted slightly more than students in Gateway courses. 43% of Non-Gateway indicated that they interacted a minimum of 4 times while 33% of students in Gateway courses interacted a minimum of 4 times. The most common response for all students was that they interacted between 2 and five times with their instructor during the semester. Of note, nearly 17% of Gateway students reported "never" interacting with their instructor and a full 30% of students in Gateway courses reported that they either never or only once interacted with their instructors. This is a large percentage of students who report few or no interactions and is an opportunity for further faculty training and attention, especially in high risk Gateway courses.

Students in Non-Gateway Courses reported more frequent interactions. A possible explanation for this could be that Non-Gateway Courses tend to be upper level courses and, in some instances, have a smaller class size so the instructor and student would have more opportunity to interact. It was encouraging that in general Pell-eligible and non-Pell-eligible students were similarly satisfied with the frequency of the interactions and the nature of the interactions. This similar level of satisfaction can be inferred that there was little or no difference in the level of interaction with faculty based on Pell status.

Gateway courses are high stakes and high failure courses; therefore, it could be detrimental for a student's success to never interact with their instructor. Never interacting with an instructor also means that the student could essentially be in a correspondence course, teaching themselves the material in the course. Researchers have been writing about the disadvantage that college students are at when they are highly autonomous (Moore, 1993). At its core, the literature is univocal in the argument that instructor interactions are critical to student engagement (Protopsaltis & Baum, 2019). The more the learner is autonomous, the more a course looks like a correspondence course or independent study.

This is consistent with ideas from Transactional Distance Theory (TDT), the primary theoretical framework for this study. One of the tenets of this theory is that the physical distance is not the primary concern for positive learner outcomes but rather the psychological and educational distance between learner and teacher are the most detrimental to a student's ability to succeed (Moore, 1993). Moore (1984) stated that this separation or distance is a pedagogical issue, not a geographic issue as can be present when there are infrequent interactions between the instructor and student. Transactional distance occurs when students feel isolated and completely autonomous in learning the course content. The relationship between transactional distance and

learner autonomy exists in online learning when transactional distance happens. Learning is an active, dynamic process facilitated through the quality and frequency of students' interactions with faculty. Reducing transactional distance through high quality interactions reduces social isolation which is a risk factor associated with attrition and college drop-out rates. Moreover, interaction with the faculty of the course increases student satisfaction, and motivation to learn and succeed (Burnett, et. al, 2007). Too much learner autonomy, as explained by Transactional Distance Theory, can cause student disengagement in the learning process. Regular and instructor-led contact is critical for a students' success otherwise a student might as well be enrolled in a correspondence course.

This study also attempted to gauge whether students felt they are present and engaged in their online course and if they perceived their instructors as present and engaged. This researcher found that students perceived themselves as present and engaged. Instructors were also viewed as present and engaged. Gateway courses are typically the first courses that a student takes when the student enters college and therefore more attention, online presence and guidance from the instructor is crucial. This creates an environment that has a positive effect on learning and completion.

Meaningful Interactions

For interactions to be effective, they need to be meaningful to a student's learning. While some disagree, many researchers have been saying that it is quite possible to have meaningful interactions in a virtual environment. McKeown (2012) posited that "The medium does not determine the outcome; rather, the quality of interaction depends on how the medium is used" (p. 7). This study focused exclusively on student perceptions and the results indicated that students perceived their interactions as meaningful.

Results showed that overwhelmingly, community college students at MSCC were satisfied with the frequency of their online interactions with faculty; 84% of Gateway students and 88% of Non-Gateway students either strongly agreed or agreed that they were satisfied. When asking students about the meaningfulness of their interactions, this research focused on whether the interactions helped to develop a relationship or rapport with the instructor, whether the interaction helped their learning of the course material and lastly, whether the interactions were positive and supportive. Again, students' perceptions were more positive than negative.

The most frequent response for initiation of interactions of all types (email, phone and face-to-face) was that both students and instructors were initiators of the interactions. About half of Non-Gateway students responded that they were the initiators for email interactions with instructors.

The literature tells us that some students identify a fear of being the first to make contact with an instructor (Allen & Dika, 2020), admitting to being shy and uncomfortable with reaching out to their instructor first. Students may also not be reaching out due to what the literature calls the "imposter syndrome" (Canning, et al., 2020). The imposter syndrome occurs when students feel their presence at college is a fraud, their achievements are obtained through luck, or that they will be further marginalized if they are "found out". It is less likely that they students who feel like imposters will connect to the people and services that can help them achieve their educational goals. These students would not reach out or initiate contact (Ramsey, 2017).

The finding that half of the Non Gateway students did not initiate contact with their professor backs the literature's contention that instructor-initiated contact are needed to make interactions more successful for online courses (Protopsaltis & Baum, 2019). This may especially be the case with low performing low-income students. The literature (Aries & Seider,

2005; Backhaus et al., 2010) is clear in that it is unreasonable to expect all students to seek out the help that they need from their faculty because of possible feelings of inferiority. The faculty are the subject matter experts and can play the role of ensuring students gain confidence in what they are learning (Protopsaltis & Baum, 2019). When students are afraid of reaching out, their fear or lack of confidence contributes to a feeling of isolation and perception that they are teaching themselves the course material in online courses. Interestingly, there is evidence in the research, (Beaudoin, 2002) that not all students want to interact with instructors and prefer to enroll in online courses for the reason of remaining "behind the scenes". Even high-performing low-income students may sometimes prefer not to interact with instructors and can be completely satisfied with that.

In the second part of research question one, the researcher took students' self-reported Pell-eligibility status and performed a correlation analysis to determine if differences existed in their perceptions of the frequency and meaningfulness of interactions. There were no statistically significant relationships between perceptions and Pell eligibility. Regardless of Pell status, the majority of students reported that they were satisfied with the interactions.

We know that lower-income students are frequently coming to college underprepared and need the guidance of their instructor to teach them skills like time-management, study skills, and how to be a college student. There is a gap in the literature with regards to studying Pell-eligible student perceptions of online interactions with faculty. Kim and Sax (2009) looked at the effect of course-related student– faculty interaction on the student's overall GPA and overall satisfaction. They found that when socioeconomic status rises, so does students' satisfaction with faculty interaction. Additionally, Females, Whites, upper-class students, and non-first-generation were more satisfied with their interaction with faculty than their male, non-White, lower-class

and first-generation peers (Kim & Sax, 2009). My study; however, found that Pell status did not affect the level of satisfaction with interactions.

RQ2. Does a relationship between perceptions of interaction with faculty (frequency and meaningfulness) and course grades exist, taking into account Pell eligibility?

Looking at Pell eligible students, none of the perceptions significantly increased likelihood of expecting a higher course grade (A/B) except satisfaction with the amount of interaction with their instructor ($exp(B)= 21.037$, $p<.01$). In other words, among Pell-eligible students, satisfaction with the amount of interaction with the instructor significantly increased the likelihood of perceived success in the course. This result indicates that students who were Pell-eligible and responded that the amount of interactions were sufficient also perceived themselves as doing well in the course.

This finding suggests that when a student is satisfied with the amount of interaction (like they felt they were getting supported) then they also felt as though "I can do this, I can get a good grade in this course". This was a strong relationship for Pell-eligible students. which is an encouraging finding. The literature reports that low-income students are at risk of unsuccessful outcomes or noncompletion (Engle, 2008; Evans et al., 2017; Hawkins, 2012; Jaggars, 2011; Jaggars, 2014; Musu-Gillette, 2015; Romero, 2016) but this finding suggests that supportive faculty interactions can mitigate those outcomes and make a difference for students. Low-income, first generation college (LIFG) students come to college underprepared and have less access to cultural capital, among other disadvantages. The situation for low-income students is improving but there is more work to be done (Cataldi et al., 2018). Cataldi et al. (2018) also found that for LIFG students it is critical for these students to persist because once they do, they

fare as well as students whose parents are college-educated. Findings from this study show that students at MSCC, whether low-income or not, had confidence in their ability to be successful and were satisfied with their interactions, indicating the satisfaction level of interaction with faculty is the same, regardless of their economic status.

Previous literature, including Gladieux and Swail (1999) raised concerns about online learning and its potential to further exacerbate the gaps in educational outcomes. Jaggars and Xu (2013) echoed this. They found that often times online delivery of education has a negative impact on student success and completion; for marginalized students this further impairs their ability to climb out of poverty. The results of this study found similarities in perceptions between all students regardless of their economic status which suggests that strides are being made with all the efforts put forth to close equity gaps in outcomes. College administrators must continue to work with faculty to lessen the negative impact.

RQ3. To what extent do students perceive the interaction with faculty in online courses to be similar in quality and frequency to those interactions in face-to-face courses?

This last research question was answered using an open-ended survey question to ask students to describe the perceived differences in interactions online versus face-to-face. While responding to the quantitative portion of the survey, students appeared to provide positive opinions regarding their online interactions, the comments found within the qualitative open-ended data were more negative regarding online courses when compared with interactions in face-to-face courses. The qualitative findings focused on three top areas, response time, “seeing” and “hearing” the instructor, and instructor attributes.

Response Time

The first most prevalent finding was the idea of response time. Some students commented that in their online course, the instructor took longer to respond to questions and requests for assistance which translated into the perception that the instructor interactions were less meaningful to their learning. Students in face-to-face courses liked that their questions were answered immediately. The delay in time it took the online instructor to respond to questions was seen as problematic.

Mandernach et al. (2007) investigated the faculty time investments for facilitating online instruction and interactions. Faculty raised concerns regarding workload demands placed on faculty who teach online as well as ambiguity related to the availability of faculty in a 24/7 online environment. Instructors expressed concerns that interaction in the online environment takes much more efficiency and time. This study found that response time is still a concern and seemingly has not significantly improved in over a decade. More support for faculty and students must be implemented to increase capacity for instructors to make time to respond to students, questions and, requests for help in a classroom setting. (Mandernach et al., 2007). Online instruction was found to take a lot more time than face-to-face instruction and finding that extra time for individual responses was challenging.

Faculty-student interactions are vital in every course regardless of delivery. The frequency and meaningfulness of faculty-student interactions can be enhanced in the online classroom by faculty quickly responding to student emails and other communication. A delay in feedback is a detriment to student learning. Lei and Gupta (2010) at the University of Nevada, Las Vegas identified a number of key learning resources that were lost in the online course, subsequently making it more difficult for students to be successful. They found that online

instructors are not able to help students with impromptu questions, instructor feedback is delayed, direct assistance and explanation from instructors is lacking, and students cannot facilitate discussions or observe how others may react to their questions or suggestions. The findings in this current study agree with the writing of Lei and Gupta (2010) in that there is still a problem of delayed feedback from instructors. Research finds that online students would benefit greatly from more instant feedback as it would diminish the gap in communication which ultimately creates the gap in learning that some students experience (Bambara, et. Al, 2009; Martin, et. al, 2019).

A long response time also relates back to the literature review on Transactional Distance. This theory hypothesizes that interaction is critical to minimizing the learning distance between students and instructors and that teaching presence as evidenced by timely feedback helps to provide structure and direction in the online environment (Protopsaltis & Baum, 2019). Comments relating to a longer response time is an example of students perceiving a larger amount of transactional distance in the online course.

Response time is still a concern and seemingly has not significantly improved in over a decade. More support for faculty and students must be implemented to increase capacity for instructors to make time to respond to students, questions and, requests for help in a classroom setting.

"Seeing" and "Hearing" the Instructor

Instructors and students agree that meaningful interactions are those in which both can see and hear each other (Hawkins et al., 2012). In my study, a common theme that presented itself in the comments was the notion of seeing and hearing the instructor for better interactions.

This finding was an unexpected finding for the researcher. Human beings have 5 basic senses that help to understand the world around us. The senses are touch, hearing, seeing, smell and taste. The human senses and how they affect education and success in education would be a fascinating addition to the literature. At this time, there was not any literature found related to this topic.

There is a plethora of research (Holden, 2007; Mahmoudi, & Gronseth, (2019); Martin, et. al. 2019; Moore, 2013; Tunks, 2012) that expounds on eLearning technologies in existence. Many of the new technologies that allow students and faculty to see and/or hear each other can improve interactions, satisfaction, persistence and completion and are continually evolving so institutions along with their instructors should invest in resources like time and money, to take advantage of their affordances and become more proficient with it.

Instructor Attributes

The third most prevalent finding is that quality interactions depend on the instructor. Instructor attributes vary greatly. For instance, some instructors were skilled at providing meaningful interactions while others were not. When students commented on interactions, they used positive and negative attributes. They wrote words and phrases like “the instructor was “warm”, “clear”, “encouraging”, approachable, clear, always available, caring, and statements including, “never take an online class unless you know the instructor”, “invested in the success of the students”, “easy to talk to”, “comfortable with online classes”, “instructor worked hard”, and “pleasant to deal with”, “instructor reached out”, “more relaxed”, “teachers hold you accountable online”, “her answers were vague”, and “teachers are not there when you need them”. Previous studies reported similar effective teacher attributes, including things like mentor,

interactor, counselor, and facilitator. These were common when defining the most effective attributes to promote student learning (Martin et al., 2019).

The open-ended textbox question asked to students allowed them to think broadly about how their interactions differed in online versus face-to-face. This opportunity allowed them to express more concerns they had broadly about the interactions they experienced. I found that some of these were things were out of their control, Response time, Instructor Attributes and "seeing" and "hearing" the instructor. These are findings for institutions to consider when working toward equitable programs and "Justice Claims".

Equity

Fairness in the frequency and quality of interactions that students receive in an online course as compared with what they receive in a face to face course is a concern for college faculty and administrators. As Levin (2007) claimed in his application of the Social Contract Theory, there is an obligation to ensure that online courses are not having a negative impact on students. What was found in this study is that the majority of students, including low-income students perceived that they were provided with satisfactory amounts of interactions with their instructors.

Social justice theory tells us that all people have the "right to learn". In this country, learning online has become a critical mode of delivery for low-income college students. Literature indicates that this delivery mode is sometimes the only way some low-income students will fit college into their busy schedules. Due to the flexibility it offers to those with overwhelming commitments and time restrictions, many vulnerable students respond to the promise of equity in community college online learning. The outcomes of low-income students

in these online courses at MSCC are a measure of equity and social justice to which community colleges like MSCC must pay attention.

We must continue to investigate if institutions are living up to "justice claims" between online vs face to face programs. Outcomes are not equitable, programs are not equitable so how can researchers use data to promote equitable program outcomes. Several times in this study, the researcher argued that educators cannot allow online courses to run on their own because by doing so, students with weaker educational backgrounds will surely suffer. Educators and administrators must continue to expect high levels of meaningful interactions with all students and adjust in particular for students with weaker educational beginnings. If students receive the same quality program online and are equally satisfied with the interactions, then they feel as though the transactional distance has been lessened, creating better opportunities to work towards more equitable outcomes.

Implications for Practice

The current research has provided important findings regarding the importance of quality interactions with faculty in online courses. Results specifically showed that students felt engaged, were satisfied with the amount of interactions, and in general, thought the interactions were substantive.

1. With that being said, it is important that higher education institutions that enroll students in online courses actively educate their faculty about the importance of instructor-initiated and frequent interactions that allow meaningful interaction and enhance learning.
2. Training for faculty and staff would emphasize the research as well as the time and resources needed for faculty to build an environment for great communication. These

conditions require coordination across an institution's divisions, and direction from top leadership (e.g., President or Chancellor).

3. Because of the reliance on online education in current times, colleges and universities typically have a dedicated eLearning Center or Center for Teaching and Learning where best practices for quality interactions should be taught and putting those best practices to work in the online course design must be required. Subsequent course evaluations where students get the opportunity to evaluate the course and instructor can include questions related to interactions. Annual evaluations of and feedback for faculty must include a review of student evaluations. Ongoing training could be offered several times during a semester. This would provide faculty an opportunity to select a session that would fit their schedule. If there is a desire to improve the learning environment for online students, such training should be mandatory for administration and faculty.
4. Ongoing improvements can be made to online courses by including better technology that allows for students to "see" and "hear" faculty. One of the ongoing improvements in learning online is the quality of multimedia tools. Technology is evolving all the time and instructors can leverage those in ways that can help create interaction and engagement while also decreasing the transactional distance between learners (Mahmoudi & Gronseth, 2019; Martin et al., 2019; Moore, 2014, 2016).
5. Ongoing meetings with faculty and their peers allow for sharing of best practices. In addition, meetings that include financial aid directors and staff to interact with faculty to discuss the needs of the low-income college population will have an ongoing impact.

6. A student online skills development program that would teach students the skills needed for success. Currently at MSCC, there is an Online Success Seminar that is an orientation that teaches students how to be successful in the online course before they are permitted to register for the online course section. An in-depth program should incorporate workshops, speaker events and other activities that would provide students an opportunity to build and hone communication and technology skills. This program will help students to build skill sets that can be used during their academic journey and in the workplace. In addition to building skills, this training will help build their confidence.

Suggestions for Further Research

The results of the current study suggest recommendations for future research.

- The sampling for this study was purposeful. For future research there may be the opportunity to select low-income Pell eligible students exclusively. Understanding the experiences of college students who are also dealing with the complex challenges of a low-income life would give greater clarity to the nature of their experiences and online course outcomes and if those experiences are equitable.
- Students in this study were given a small textbox to give their written feedback regarding the differences between online and face-to-face interactions. In future research, it would be interesting to conduct interviews with students to delve further into their experiences in face-to-face classrooms, opportunities for interactions, and how we can inject more of those experiences into the online classroom.
- Technology is evolving all the time. Further and ongoing research on new technologies that enter into online education would allow instructors to constantly adapt and serve

their students. Innovations that create interactions that look and feel more like face-to-face interactions are needed. Future research could garner perceptions of students as they compare traditional discussion question interactions vs Zoom discussion question interactions.

- Studying intersections with a focus on diversity is an opportunity for future research as well. This would allow for exploring different angles of this topic in more detail. In depth analysis of the intersectionality of other minoritized groups, like race/ethnicity and gender, would be important to explore in future research.
- This research can lay the groundwork for further research and development of specific requirements for minimum numbers of meaningful interactions in the online classroom developed by the College's Center for Teaching and Learning.

Conclusions

In the 2008 reauthorization of the Higher Education Act, Congress codified into law this key distinction: in order for a program to be classified as "distance education" (online) it must use technology to support regular and substantive interaction between the students and the instructor, synchronously or asynchronously (US Department of Education, 2010). This distance education rule is non-negotiable for full access to federal student aid. No longer will students be satisfied or successful with a course that requires solely self-learning; which is what correspondence courses offer. This study examined community college student perceptions of their online course interactions and if there was a difference in the perceptions of those who receive federal financial aid. Virtual learning is critical to the completion of a credential that will lift students out of poverty. The findings of this study are important to the research surrounding academic success and persistence of low-income students. Access to college for low-income

students has improved degree attainment rates but this group and other minoritized groups still lag behind. There remains the necessity to understand academic success and persistence issues that impact students. We continue to have shortcomings when it comes to equitable outcomes. The United States continues to have systems that are oppressive. Education is one of the most important systems and one of the most critical resources is its community college instructors. We need to continue to train instructors how to create and sustain meaningful and frequent interactions in online learning environments in order to enhance low-income students' performance and chances of completing their education.

References

Abu El-Haj, T. R. (2012). *Elusive justice: Wrestling with difference and educational equity in everyday practice*. Taylor and Francis.

Adams, M., Bell, L.A. & Griffin, P. (2007). *Teaching for diversity and social justice*. Routledge.

Allen, M. E., & Dika, S. L. (2020). Available but not approachable: Black business students' interactions with faculty at a Historically White Institution. *Journal of Underrepresented & Minority Progress*, *4*(2), 229-250. https://doi.org/10.32674/jump.v4i2.2581

American Psychological Association (2020). *Publication manual of the American Psychological Association: The official guide to APA style* (7th ed.). American Psychological Association.

Anonymous (2019). The plot against low-income students; Robert Shireman sold Cuomo on a plan to kill for-profit schools. *The Wall Street Journal*. https://www.wsj.com/articles/the-plot-against-low-income-students-11551485334

Aries, E., & Seider, M. (2005). The interactive relationship between class identity and the college experience: The case of lower income students. *Qualitative Sociology*, *28*(4), 419-443. https://doi.org/10.1007/s11133-005-8366-1

Artino Jr, A. R., & Stephens, J. M. (2009). Academic motivation and self-regulation: A comparative analysis of undergraduate and graduate students learning online. *The Internet and Higher Education*, *12*(3-4), 146-151.

Backhaus, A. (2010). The college experience: Exploring the relationships among student socioeconomic background, experiences of classism, and adjustment to college. In C. Horn, C. Garbin, D. Kauffman, & M. Scheel (Eds.): ProQuest Dissertations Publishing.

Bailey, T. R., Jaggars, S., & Jenkins, D. (2015). *Redesigning America's community colleges: A clearer path to student success*. Community College Research Center. https://ccrc.tc.columbia.edu/publications/redesigning-americas-community-colleges.html

Baker, K. Q., & Moyer, D. M. (2019). The Relationship between students' characteristics and their impressions of online courses. *The American Journal of Distance Education*, *33*(1), 16-28. https://doi.org/10.1080/08923647.2019.1555301

Balaji, M. S., & Chakrabarti, D. (2010). Student interactions in online discussion forum: Empirical research from "Media Richness Theory" perspective. *Journal of Interactive Online Learning*, *9*(1), 1-22.

Bambara, C. S., Harbour, C. P., Davies, T. G., & Athey, S. (2009). Delicate engagement: The lived experience of community college students enrolled in high-risk online courses. *Community College Review*, *36*(3), 219-238. https://doi.org/10.1177/0091552108327187

Bangert, A. (2008). The influence of social presence and teaching presence on the quality of online critical inquiry. *Journal of Computing in Higher Education*, *20*(1), 34-61. doi:10.1007/BF03033431

Baron, D. E. (2009). *A better pencil readers, writers, and the digital revolution*. Oxford University Press.

Bean, J. P., & Metzner, B. S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research*, *55*(4), 485-540. https://doi.org/10.3102/00346543055004485

Beatty-Guenter, P. (2003). Studying distance education at community colleges. *Journal of Applied Research in the Community College*, *10*(2), 119-126.

Beaudoin, M. F. (2002a). Distance education leadership: An essential role for the new century. *Journal of Leadership & Organizational Studies, 8*(3), 131-144. doi:10.1177/107179190200800311

Beaudoin, M. F. (2002b). Learning or lurking?: Tracking the "invisible" online student. *The Internet and Higher Education, 5*(2), 147-155. doi:10.1016/S1096-7516(02)00086-6

Becerra, D. (2010). Differences in perceptions of barriers to college enrollment and the completion of a degree among Latinos in the United States. *Journal of Hispanic Higher Education, 9*(2), 187-201. doi:10.1177/1538192709359051

Beck, D., & Ferdig, R. E. (2008). Evolving roles of online and face-to-face instructors in a lecture/lab hybrid course. *Online Submission, 7*.

Bell, L. A. (2007). Theoretical foundations for social justice education. In M. Adams, L. A. Bell, & P. Griffin (Eds.) *Teaching for diversity and social justice* (pp. 1-14). Routledge.

Bell, D., Hackett, C., & Hoffman, J. (2016). Student satisfaction and success in a low-income community college environment. *Journal of Applied Research in the Community College*, *23*(1), 1-16.

Bender, T. (2003*). Discussion-based online teaching to enhance student learning: Theory, practice, and assessment*. Stylus Pub.

Bernard, R., Abrami, P., Borokhovski, E., Wade, C., Tamim, R., Surkes, M., & Bethel, E. (2009). A meta-analysis of three types of interaction treatments in distance education. *Review of Educational Research, 9*(3), 1243-1289. doi:10.3102/0034654309333844

Bettinger, E. P., Fox, L., Loeb, S., & Taylor, E. S. (2017). Virtual classrooms: How online college courses affect student success. *American Economic Review*, *107*(9), 2855-2875. https://doi.org/10.1257/aer.20151193

Black, D., Bissessar, C., & Boolaky, M. (2019). Online education as an opportunity equalizer: The changing canvas of online education. *Interchange, 50*(3), 1-21. doi:10.1007/s10780-019-09358-0

Borklund-Young, A. (2016). *Family income and the college completion gap*. Johns Hopkins University: Institute for Education Policy. http://edpolicy.education.jhu.edu/family-income-and-the-college-completion-gap/

Burnett, K., Bonnici, L. J., Miksa, S. D., & Kim, J. (2007). Frequency, intensity and topicality in online learning: An exploration of the interaction dimensions that contribute to student satisfaction in online learning. *Journal of Education for Library and Information Science, 48*(1), 21-35.

Canning, E. A., LaCosse, J., Kroeper, K. M., & Murphy, M. C. (2020). Feeling like an imposter: The effect of perceived classroom competition on the daily psychological experiences of first-generation college students. *Social Psychological and Personality Science, 11*(5), 647–657. https://doi.org/10.1177/1948550619882032

Carnevale, A. P., & Van Der Werf, M. (2017). *The 20% solutions: Selective colleges can afford to admit more Pell Grant recipients*. Policy Report. Center on Education and the Workforce: Georgetown University.

Carrasquel-Nagy, M. (2014). Online attrition in a community college: Are low-income students at a disadvantage?. ProQuest Dissertations Publishing.

Caruth, G. D., & Caruth, D. L. (2013). Distance education in the United States: From correspondence courses to the internet. *Turkish Online Journal of Distance Education, 14*(2), 141-149. https://doi.org/10.17718/tojde.48877

Cataldi, E. F., Bennett, C. T., & Chen, X. (2018). *First-generation students: College access, persistence, and postbachelor's outcomes*. Stats in Brief. NCES 2018-421. National Center for Education Statistics.

Cavalcanti, A. P., de Mello, R. F. L., Rolim, V., André, M., Freitas, F., & Gaševic, D. (2019). *An analysis of the use of good feedback practices in online learning courses*. 2019 IEEE 19th International Conference on Advanced Learning Technologies (ICALT).

Center for Community College Student Engagement (2019). *Community College Survey for Student Engagement.* https://www.ccsse.org/

Chen, X. (2005). *First-generation students in postsecondary education: A look at their college transcripts*. National Center for Education Statistics. https://nces.ed.gov/das/epubs/pdf/2005171_es.pdf

Clarke, C. (2017). *Achieving equitable outcomes among low-income students in rural community colleges: Faculty perspectives*. ProQuest Dissertations Publishing.

Clason, D. & Dormody, T. (1994). Analyzing data measured by individual Likert-type items. *Journal of Agricultural Education*, *35*(4), 4.

Cohen, A. M., Brawer, F. B., & Kisker, C.B. (2014). *The American Community College*. 6th ed. Jossey-Bass.Cole, M. T., Shelley, D. J., Swartz, L. B., Henderson, S., McGreal, R., & Conrad, D. (2014). Online instruction, e-learning, and student satisfaction: A three year study. *International Review of Research in Open and Distributed Learning*, *15*(6), 111-131. https://doi.org/10.19173/irrodl.v15i6.1748

Colson, R. (2017). Acceleration: A degree-completion strategy for online adult students. *EDUCAUSE Review*, *52*(4), 60.

Community College Survey of Student Engagement (2019). *Survey of Online Student Engagement*. Center for Community College Student Engagement. https://www.ccsse.org/SOSE/

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches*. Sage.

Deming, D. J., Goldin, C. D., Katz, L. F., & Yuchtman, N. (2015). Can online learning bend the higher education cost curve? *American Economic Review*, *105*(5). https://doi.org/10.1257/aer.p20151024

Dillon, S. (2006). Online colleges receive a boost from congress. *New York Times*.

Dixson, M. D. (2010). Creating effective student engagement in online courses: What do students find engaging? *Journal of the Scholarship of Teaching and Learning*, *10*(2), 1.

Dowd, A. (2003). From access to outcome equity: Revitalizing the democratic mission of the community college. *Annals of the American Academy of Political and Social Science*, *586*, 92-119.

Dynarski, S. M. (2017). *Online Schooling: Who is harmed and who is helped?* Brookings Institute. https://www.brookings.edu/research/who-should-take-online-courses/

Engle, J. (2008). *Moving beyond access: College success for low-income, first-generation students*. Pell Institute for the Study of Opportunity in Higher Education.

Escueta, M. (2017). *Education technology: An evidence-based review*. National Bureau of Economic Research.

Evans, W., Kearney, M., Perry, B., & Sullivan, J. (2017). Increasing community college completion rates among low-income students: Evidence from a randomized controlled trial evaluation of a case management intervention. *NBER Working Paper Series*, 24150. doi:10.3386/w24150

Fontana, A., & Frey, J. H. (2005). The interview: From neutral stance to political involvement. *The Sage Handbook of Qualitative Research*, 695–727.

Friedman, T. L. (2007). *The world is flat 3.0: A brief history of the twenty-first century.* Picador.

Furlong, A., & Cartmel, F. (2009). *Higher education and social justice*. McGraw-Hill International.

Gagne, M., & Shepherd, M. G. (2001). Distance learning in accounting: A comparison between distance and traditional graduate accounting class. *T.H.E. Journal*, *28*(9), 58-64.

Gair, S., & Baglow, L. (2018). Social justice in a tertiary education context: Do we practice what we preach? *Education, Citizenship and Social Justice, 13*(3), 207-216. https://doi.org/10.1177/1746197918793059

Gall, M. D., Gall, J. P., & Borg, W. R., (2007). *A guide for preparing a thesis or dissertation proposal in education* (5th ed). Pearson Education.

Garcia, M. (2010). When Hispanic students attempt to succeed in college, but do not. *Community College Journal of Research and Practice, 34*(10), 839-847. doi:10.1080/10668926.2010.485003

Garrison, D. R., & Cleveland-Innes, M. (2005). Facilitating cognitive presence in online learning: Interaction is not enough. *American Journal of Distance Education, 19*(3), 133-148. doi:10.1207/s15389286ajde1903_2

Gladieux, L. E. (1999). *The virtual university & educational opportunity. Issues of equity and access for the next generation: Policy perspectives*. College Board Publications.

Gladieux, L. (2000). Beyond access: Improving the odds of college success. *Phi Delta Kappan*, *81*(9), 688-692.

Gladieux, L. E., & Swail, W. S. (1999). The virtual university and educational opportunity: panacea or false hope?. *Higher Education Management, 11*, 43-56.

Goel, L., Zhang, P., & Templeton, M. (2012). Transactional distance revisited: Bridging face and empirical validity. *Computers in Human Behavior, 28*(4), 1122-1129.

Gregory, C. B., & Lampley, J. H. (2016). Community college student success in online versus equivalent face-to-face courses. *Journal of Learning in Higher Education, 12*(2), 63-72.

Gunawardena, C. N. & Zittle, F.W. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *American Journal of Distance Education, 11*(3), 3-26.

Hawkins, A., Barbour, M. & Graham, C. (2012). "Everybody is their own Island": Teacher disconnection in a virtual school. *International Review of Research in Open and Distributed Learning*, *13*(2), 123–144. https://doi.org/10.19173/irrodl.v13i2.967

Heerema, D., & Rogers, R. (2001). Avoiding the quality/quantity trade-off in distance education. *T.H.E. Journal*, *29*(5), 14-21.

Hernandez, J. C., & Lopez, M. A. (2004). Leaking pipeline: Issues impacting Latino/a college student retention. *Journal of College Student Retention: Research, Theory & Practice*, *6*(1), 37-60.

Hegji, A. (2015). Institutional eligibility for participation in Title IV student financial aid programs. *Congressional Research Service*.

Holden, J. T. (2007). *An Instructional Media Selection Guide for Distance Learning (4th ed.).* ERIC Clearinghouse.

Holmberg, B. (1967). *Correspondence education: A survey of applications, methods, and problems*. https://files.eric.ed.gov/fulltext/ED045868.pdf

Hytten, K., & Bettez, S. (2011). Understanding education for social justice. *The Journal of Educational Foundations, 25*(1/2), 7-24.

Jaggars, S. (2011). *Online learning: Does it help low-income and underprepared students?* Community College Research Center.

Jaggars, S. S. (2014). Choosing between online and face-to-face courses: Community college student voices. *American Journal of Distance Education, 28*(1), 27-38. https://doi.org/10.1080/08923647.2014.867697

Jaggars, S., & Xu, D. (2010). *Online Learning in the Virginia Community College System.* Distributed by ERIC Clearinghouse. https://academiccommons.columbia.edu/doi/10.7916/D80V89VM

Jaggars, S., & Xu, D. (2016). How do online course design features influence student performance? *Computers & Education, 95,* 270-284. doi:10.1016/j.compedu.2016.01.014

Johnson, H. P., Mejia, M. C., & Cook, K. (2015). *Successful online courses in California's Community Colleges*. Public Policy Institute.

Kaupp, R. (2012). Online Penalty: The Impact of Online Instruction on the Latino-White Achievement Gap. *Journal of Applied Research in the Community College, 19*(2), 8.

Kentnor, H. (2015). Distance education and the evolution of online learning in the United States. *Curriculum and Teaching Dialogue, 17*(1/2), 21A.

Kim, Y. K., & Sax, L. J. (2009). Student–faculty interaction in research universities: Differences by student gender, race, social class, and first-generation status. *Research in Higher Education, 50*(5), 437-459.

Koch, A.K., & Rodier, R. (2014). *Gateways to Completion Guidebook*. John N. Gardner Institute for Excellence in Undergraduate Education. https://www.jngi.org/gateways-to-completion

Larreamendy-Joerns, & Leinhardt. (2006). Going the Distance with Online Education. *Review of Educational Research*, 76(4), 567–605. https://doi.org/10.3102/00346543076004567

Lander, M. E. (2009). *Investigation of the relationships among online community college students' characteristics and instructional delivery model preferences.* [Doctoral dissertation, University of North Carolina at Charlotte]. ProQuest Dissertations Publishing.

Lee, Y., Choi, J., & Kim, T. (2013). Discriminating factors between completers of and dropouts from online learning courses. *British Journal of Educational Technology*, *44*(2), 328-337. https://doi.org/10.1111/j.1467-8535.2012.01306.x

Lei, S. A., & Gupta, R. K. (2010). College distance education courses: Evaluating benefits and costs from institutional, faculty and students' perspectives. *Education*, *130*(4), 616.

Levin, J. S. (2007). *Nontraditional students and community colleges: The conflict of justice and neoliberalism*. Palgrave Macmillan.

Linardopoulos, N. (2012). Employers' perspectives of online education. *Campus-Wide Information Systems*, *29*(3), 189. doi:10.1108/10650741211243201

Lundberg, C. A., & Schreiner, L. A. (2004). Quality and frequency of faculty-student interaction as predictors of learning: An analysis by student race/ethnicity. *Journal of College Student Development*, *45*(5), 549-565.

Mahmoudi, L., & Gronseth, S. (2019). Video-based discussion: Promoting presence through interactions in online higher education courses. In *Ubiquitous inclusive learning in a digital era* (pp. 128-153). IGI Global.

Malcom-Piqueux, L., & Bensimon, E. M. (2017). Taking equity-minded action to close equity gaps. *Peer Review, 19*(2), 5.

Mandernach, B. J., Dailey-Hebert, A., & Donnelli-Sallee, E. (2007). Frequency and time investment of instructors' participation in threaded discussions in the online classroom. *Journal of Interactive Online Learning, 6*(1), 1-9.

Mansfield, M. (2017b). *The impact of the digital divide on first-year community college students*. ProQuest Dissertations Publishing.

Martin, F., Ritzhaupt, A., Kumar, S., & Budhrani, K. (2019). Award-winning faculty online teaching practices: Course design, assessment and evaluation, and facilitation. *The Internet and Higher Education, 42*, 34-43. doi:10.1016/j.iheduc.2019.04.001

Matters, Q. (2019). *Course Design Reviews*. Quality Matters. https://www.qualitymatters.org/index.php/reviews-certifications/course-design-reviews

Matthews, D. (1999). The origins of distance education and its use in the United States. *THE Journal : Technological Horizons in Education*, 27(2), 54.

McClenney, K. M. (2004). Redefining quality in community colleges: Focusing on good educational practice. *Change: The Magazine of Higher Learning*, *36*(6), 16-21.

McClenney, K. M. (2006). Benchmarking effective educational practice. *New Directions for Community Colleges, 2006*(134), 47-55. doi:10.1002/cc.236

McKeown, K. (2012). *Can online learning reproduce the full college experience?* Center for Policy Innovation. Heritage Foundation.

Merriam, S. B. & Tisdell, E.J. (2016). *Qualitative research: A guide to design and implementation*. John Wiley & Sons

Moore, M. G. (1989). Editorial: Three types of interaction. *American Journal of Distance Education*, *3*(2), 1–7. https://doi.org/10.1080/08923648909526659

Moore, M. G. (1993). Theory of transactional distance. *Theoretical Principles of Distance Education*, *1*, 22-38.

Moore, M. G., & Kearsley, G. G. (1996). *Distance education: A system view*. Wadsworth.

Moore, K., Bartkovich, J., Fetzner, M., & Ison, S. (2003). Success in cyberspace: Student retention in online courses. *Journal of Applied Research in the Community College*, *10*(2), 107-118.

Murphy, C. A., & Stewart, J. C. (2017). On-campus students taking online courses: Factors associated with unsuccessful course completion. *The Internet and Higher Education, 34*, 1-9. https://doi.org/10.1016/j.iheduc.2017.03.001

Musu-Gillette, L., J. Robinson, J. McFarland, A. KewalRamani, A. Zhang, & S. Wilkinson-Flicker (2016). *Status and trends in the education of racial and ethnic groups 2016*. NCES, IES, U.S. Department of Education.

National Center for Education Statistics (2019). *Integrated Postsecondary Education Data System (IPEDS)*. http://nces.ed.gov

Noel, L. (2012). *The 2012 National Online Learners Priorities Report*. http://www.noellevitz.com/Benchmark.

North Carolina Community Colleges (2017). *Distance learning report*. http://vlc.nccommunitycolleges.edu/wp-content/uploads/reports/DL2017.pdf

North Carolina Community Colleges (2019). *Equity report*. https://www.nccommunitycolleges.edu/sites/default/files/data-warehouse/equity_report_20190516.pdf

Nussbaum, M. (2001). The enduring significance of John Rawls. *The Chronicle of Higher Education, 47*(45), 9.

Ocean, M. (2017). Financially eligible Pell Grant community college students' perceptions of institutional integration. *Journal of College Student Retention: Research, Theory & Practice, 19*(3), 333-356.

Oomen-Early, J. & Murphy., L. (2008). Self actualization and e-learning: A qualitative investigation of university faculty's perceived barriers to effective online instruction. *International Journal of E-learning, 8*(2).

Pace, C. R. (1990). The undergraduates: A report of their activities and progress in college in the 1980's. *Change*, *23*(2), 55‑55.

Palacios, A. M. G., & Wood, J. L. (2016). Is online learning the silver bullet for men of color? An institutional-level analysis of the California Community College system. *Community College Journal of Research and Practice, 40*(8), 643-655. doi:10.1080/10668926.2015.1087893

Parsad, B., Lewis, L., & Tice, P. (2008). *Distance education at degree-granting postsecondary institutions : 2006-2007*. National Center for Education Statistics, Institute of Education Sciences, U.S. Dept. of Education.

Pasadena City College. (2019). *PCC online distance education*. https://pasadena.edu/faculty-and-staff/remote-instruction.php

Pelletier, P. (2013). *What online teachers need to know*. Faculty Focus. https://www.facultyfocus.com/articles/online-education/what-online-teachers-need-to-know/

Pezalla, A. E., Pettigrew, J., & Miller-Day, M. (2012). Researching the researcher-as-instrument: An exercise in interviewer self-reflexivity. *Qualitative Research, 12*(2), 165-185. doi:10.1177/1468794111422107

Phipps, R., & Merisotis, J. (2000). *Quality on the line: Benchmarks for success in internet-based distance education*. Institute for Higher Education Policy. http://www.ihep.org/research/publications/quality-line-benchmarks-success-internet-based-distance-education

Picciano, A. G. (2002). *Educational leadership and planning for technology*. Prentice Hall.

Poulin, R. (2016). *Is your distance education course actually a correspondence course*. WCET Frontiers. https://wcetfrontiers.org/2012/04/20/correspondence-definition/

Poulin, R., & Davis, V. (2016). *Interpreting what is required for "Regular and Substantive Interaction"*. WCET Frontiers. https://wcetfrontiers.org/2016/09/30/interpreting-regular-and-substantive-interaction/

Procedure, S. C. C. D. (2015). *Distance education regular effective contact*. https://www.swccd.edu/_resources/vision/documents/ser/sersupplemental/SR11_4115_AP_RegularEffectiveContact.pdf

Protopsaltis, S., & Baum, S. (2019). *Does online education live up to its promise? A look at the evidence and implications for federal policy*. Center for Educational Policy Evaluation. https://mason.gmu.edu/~sprotops/OnlineEd.pdf

Quality Matters, (2019). *Course Design Reviews*. https://www.qualitymatters.org/index.php/reviews-certifications/course-design-reviews

Rawls, J. (1971). *A theory of justice*. Harvard University Press.

Remesal, A., & Colomina, R. (2013). Social presence and online collaborative small group work: A socio-constructivist account. *Computers & Education*, *60*(1), 357-367.

Ramsey, B. (2017). Feeling like a fraud: Helping students renegotiate their academic identities. *College & Undergraduate Libraries*, *25*(1), 86–90. https://doi.org/10.1080/10691316.2017.1364080

Romero, E. (2016). *Thriving in community college students of low socioeconomic status*. ProQuest Dissertations Publishing.

Rovai, A. P. (2003). In search of higher persistence rates in distance education online programs. *Internet and Higher Education*, *6*(1), 1-16. https://doi.org/10.1016/S1096-7516(02)00158-6

SACSCOC (2012). *Distance and Correspondence Education Policy Statement*. https://www2.fgcu.edu/ACS/Files/SACSCOC_Distance_and_correspondence_policy_final.pdf

Schademan, A. R., & Thompson, M. R. (2016). Are college faculty and first-generation, low-income students ready for each other? *Journal of College Student Retention: Research, Theory & Practice*, *18*(2), 194-216. doi:10.1177/1521025115584748

Schmid, C. (2010). Challenges and opportunities of community colleges. *Higher Education and Equality of Opportunity: Cross-National Perspectives*, 25.

Schreiner, L., Noel, P., Anderson, E. C., & Cantwell, L. (2011). The impact of faculty and staff on high-risk college student persistence. *Journal of College Student Development*, *52*(3), 321-338. doi:10.1353/csd.2011.0044

Seay, S. (2006). Strategies for success: Improving the academic performance of low-income adult and first-generation students in online general education courses. *The Journal of Continuing Higher Education, 54*(3), 22-35.

Shea, P., & Bidjerano, T. (2014). Does online learning impede degree completion? A national study of community college students. *Computers and Education,* 75, 103–111. https://doi.org/10.1016/j.compedu.2014.02.009

Shea, P., Bidjerano, T., Henderson, S., Conrad, D., & McGreal, R. (2018). Online course enrollment in community college and degree completion: The tipping point. *International Review of Research in Open and Distributed Learning, 19*(2). https://doi.org/10.19173/irrodl.v19i2.3460

Skytt, J., & Turville, J. (2012). Do all students really matter? *ATA Magazine, 92*(3), 4-8.

Smale, M. A. (2017). *Digital Technology as Affordance and Barrier in Higher Education*. Springer. https://doi.org/10.1007/978-3-319-48908-7

Spriggs, J. (2018). *An exploration of persistence among successful low-income community college students in North Carolina*. ProQuest Dissertations Publishing.

St. Amour, M. (2019). *Flagships fail on financial equity*. Inside Higher Ed. https://www.insidehighered.com/news/2019/09/12/most-public-flagship-universities-are-unaffordable-low-income-students-report-finds

Surowiecki, J. (2015). The rise and fall of for-profit schools. *The New Yorker, 91*(34), 34.

Swan, K. (2003). Learning effectiveness online: What the research tells us. *Elements of quality online education, practice and direction, 4*(1), 13-47.

Tallent-Runnels, M. K., Thomas, J. A., Lan, W. Y., Cooper, S., Ahern, T. C., Shaw, S. M., & Liu, X. (2006). Teaching Courses Online: A review of the research. *Review of Educational Research*, *76*(1), 93-135. https://doi.org/10.3102/00346543076001093

Tunks, K. W. (2012). An Introduction and Guide to Enhancing Online Instruction with Web 2.0 Tools. *Journal of Educators Online*, *9*(2), n2.

Ubell, R. (2018). *Does Online Education Help Low-income Students Succeed?* https://www.edsurge.com/news/2018-07-17-does-online-education-help-low-income-students-succeed

US Census Board (2018). *Census.gov*. https://www.census.gov/quickfacts/fact/table/guilfordcountynorthcarolina#

US Department of Education. (2010). *Higher Education Opportunity Act–2008*.

Vagle, M. (2018). *Crafting phenomenological research* (2nd ed). Routledge.

Van Manen, M. (1997). From meaning to method. *Qualitative Health Research, 7*(3), 345-369.

Van Manen, M. (2016). *Researching lived experience: Human science for an action sensitive pedagogy* (2nd ed.). Taylor and Francis.

Viggiano, T., López Damián, A. I., Morales Vázquez, E., & Levin, J. S. (2018). The others: Equitable access, international students, and the community college. *Journal of Studies in International Education*, *22*(1), 71-85. https://doi.org/10.1177/1028315317725883

Wandler, J., & Imbriale, W. (2017). Promoting undergraduate student self-regulation in online learning environments. *Online Learning, 21*(2). doi: 10.24059/olj.v21i2.881

Ward, M. E., Peters, G., & Shelley, K. (2010). Student and faculty perceptions of the quality of online learning experiences. *International Review of Research in Open and Distributed Learning 11*(3): 57-77.

Watkins, B. L., & Wright, S. J. (1991). *The foundations of American distance education: A century of collegiate correspondence study*. Kendall/Hunt Publishing Company.

WCET. (2019). *About WCET*. https://wcet.wiche.edu/about

Wilson, S. (2016). At issue: Lack of persistence in college and the high-achieving, low-income student: A *Review of the Literature*. *The Community College Enterprise*, *22*(2), 42-51.

Workman, J. J., & Stenard, R. A. (1996). Student support services for distance learners.

Xu, D., & Jaggars, S. (2013). The impact of online learning on students' course outcomes: Evidence from a large community and technical college system. *Economics of Education Review*, *37*, 46–57. https://doi.org/10.1016/j.econedurev.2013.08.001

Young, A., & Norgard, C. (2006). Assessing the quality of online courses from the students' perspective. *The Internet and Higher Education*, *9*(2), 107-115. doi:10.1016/j.iheduc.2006.03.001

Yuen, V. (2019). New insights into attainment for low-income students. https://www.americanprogress.org/issues/education-postsecondary/reports/2019/02/21/466229/new-insights-attainment-low-income-students/

Zimmerman, B. J. (2002). Achieving academic excellence: A self-regulatory perspective. In M. Ferrari (Ed.), *The pursuit of excellence through education* (pp.85-110). Lawrence Erlbaum Associates.

APPENDIX A

Consent to be Part of a Research Study

Title of the Project: LOW-INCOME COMMUNITY COLLEGE STUDENT PERCEPTIONS OF FACULTY INTERACTION IN ONLINE COURSES.

Principal Investigator: Carolyn V. Salanger, Guilford Technical Community College (GTCC)

Faculty Advisor: Dr. Lisa Merriweather, University of North Carolina at Charlotte

You are invited to participate in an online research survey. Participation in this research survey is voluntary. The information provided is to help you decide whether or not to participate. If you have any questions, please ask.

Important Information You Need to Know

- The purpose of this study is to understand the perception of faculty interaction in online courses that students in a community college experience in order to create better support services.
- You will be asked to complete a short survey.
- If you choose to participate, it will require 10 – 15 minutes of your time.
- Your student record will be viewed and the following information will be used in the study:
    - Enrollment in Spring, 2020 courses
- There are no risks or discomforts from this research.
- Benefits: you will be able to inform the effort to created better policies and practice in online student success and student supports.

Please read this form and ask any questions you may have before you decide whether to participate in this research study.

Why are we doing this study?

A post-secondary credential is critical in the United States in order to earn a living wage. Nationally, less than 30 percent of the population 25 years and older have a post-secondary credential and in North Carolina only 40.3 percent of adult residents have an associates degree and higher (Bureau, 2015.) The cost of a college education is increasing, making a bachelor's degree out of reach for more Americans.

For working parents or single parents, the flexibility of an online education is critical. A flexible online format can provide the pathway for many Americans but for low-income members of our

community, what may seem like a simple connection is out of reach. The goal of this research is to help more students succeed in college and by completing this survey; the researcher will create better online support services for community college students.

Why are you being asked to be in this research study.

You are being asked to be in this study because we are seeking students who are taking at least one online course in spring, 2020 and one face-to-face course in the fall, 2019 or spring, 2020 term.

What will happen if I take part in this study?

If you choose to participate in this study, you are asked to complete a short survey. It will take approximately 10-15 minutes to complete. The survey will ask questions, one is an open-ended question. The researcher is attempting to understand your experience in online courses and your experience and perceptions of interactions with your faculty in online courses.

Your time commitment will be about a total of 10-15 minutes.

There is absolutely no obligation for you to participate in this study and I appreciate your consideration.

What benefits might I experience?

Your participation might provide future benefits to students at GTCC who enroll in online courses. Because the purpose of this study is to understand the perceptions that students have, with better understanding, the researcher will provide suggestions for improved course supports, which may benefit you and future GTCC students.

What risks might I experience?

There is always a small risk that your data would be exposed to researchers involved in this study. To minimize this risk and keep your confidential information protected, we will use a number of proven practices.

How will my information be protected?

First, your data will be store on a password-protected computer in a locked office. The data will be on a password-protected spreadsheet. My file will be stored in a two-factor authentication file on my Google Drive.

It is possible that the results of this study will be published. To protect your privacy we will not include any information that could identify you. We will protect the confidentiality of the research data and will not include identifiers.

Other people may need to see the information we collect about you. Including people who work for UNC Charlotte, my faculty dissertation committee and other agencies as required by law or allowed by federal regulations.

How will my information be used after the study is over?

After this study is complete, study data may be shared with other researchers for use in other studies or as may be needed as part of publishing our results. The data we share will NOT include information that could identify you.

The information we share with these other investigators will not contain information that could directly identify you. There still may be a chance that someone could figure out that the information is about you.

Will I be paid for taking part in this study?

No.

Who can profit from this study?

I, as the researcher am completing this study as part of class requirements as well as requirements toward completion of my doctorate. I may profit in the end by qualifying for a higher-level educational administrative position.

What are my rights if I take part in this study?

It is up to you to decide to be in this research study. Participating in this study is voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. You do not have to answer any questions you do not want to answer.

If you choose to stop participating in this study, your data will be destroyed immediately and not used in the research study.

Who can answer my questions about this study and my rights as a participant?

For questions about this research, you may contact, Carolyn V. Salanger at cvsalanger@gtcc.edu or (336) 334-4822. Ext. 50659. You may also contact my faculty advisor. Dr. Lisa Merriweather at lmerriwe@uncc.edu. At GTCC you may also contact Courtney Lambeth, Research Assistant, Office of Institutional Research, cmlambeth@gtcc.edu or (336)334-4822, ext. 50276.

If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the

researcher(s), please contact the Office of Research Compliance at 704-687-1871 or uncc-irb@uncc.edu.

Consent to Participate

By electronically clicking on “agree”, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will receive a copy of this document for your records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I understand what the study is about and my questions so far have been answered. I agree to take part in this study.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form for your records. Clicking on the “Agree” button indicates that

- You have read the above information
- You voluntarily agree to participate
- You are 18 years of age or older

¨ Agree

¨ Disagree

APPENDIX B

Email Recruitment

Message 1:

Subject line: Students taking an online course, your perceptions of interactions with faculty in the course (survey). Please complete a short survey.

Let your voice be heard! As a student taking an online course this semester, your perceptions are critical to future improvements!

As a UNC Charlotte doctoral candidate, I am seeking current GTCC students to participate in a survey for a research study. The purpose of this study is to better understand students' perceptions of faculty interactions in your Spring, 2020 online course.

To participate in this study you must meet the following eligibility requirements.

- Be a current GTCC student
- Be 18 years of age or older
- Be enrolled in at least 1 online course in spring 2019 and 1 face-to-face course in either the fall 2019 or the spring 2020 semester.

Participation in this study includes:

- Completion of a 10-15 minute online survey.

Please contact Carolyn Salanger, cvsalanger@gtcc.edu (336)334-4822, ext. 50659

The results are confidential and will only be shared with individuals directly involved in the study. Thank you for your consideration!

Carolyn V. Salanger
UNC Charlotte, College of Education
Doctoral candidate, Educational Leadership

Faculty advisor:
Dr. Lisa Merriweather
UNC Charlotte
lmerriwe@uncc.edu
(704) 687-8867, ext.6

APPENDIX C

Reminder Email

Subject line: **Reminder:** Students taking an online course, your perceptions of interactions with faculty in the course (survey). Please complete a short survey.

Let your voice be heard! As a student taking an online course this semester, your perceptions are critical to future improvements!

As a UNC Charlotte doctoral candidate, I am seeking current GTCC students to participate in a survey for a research study. The purpose of this study is to better understand students' perceptions of faculty interactions in your Spring, 2020 online course.

To participate in this study you must meet the following eligibility requirements.

- Be a current GTCC student
- Be 18 years of age or older
- Be enrolled in at least 1 online course in spring, 2020 and 1 face-to-face course in either fall, 2019 or spring, 2020 semester.

Participation in this study includes:

- Completion of a 10-15 minute online survey.

Please contact Carolyn Salanger,
cvsalanger@gtcc.edu
(336)334-4822, ext. 50659

The results are confidential and will only be shared with individuals directly involved in the study. Thank you for your consideration!

APPENDIX D

Reminder Text Message

Text message sent to students to invite them to participate:
Research study invitation. Please complete this survey regarding your GTCC Spring, 2020 online course. This research is being conducted by UNC Charlotte researchers. Click here to access further information.

APPENDIX E

Survey Questions

Greetings students,

Thank you for participating in this important study. Please take a few minutes to answer these questions about the current online course in which you are registered. The survey focuses on the faculty interactions in your online course.

Frequent is defined as: happening often; common.
Meaningful is defined as: important or valuable to your learning.

This survey is about your experience in ONE online course you are taking this semester.

1. Which one of the following online courses are you referring to when answering these questions? If you are enrolled in more than one online, please choose just one.

a.) PSY 150
b.) WRITING AND INQUIRY
c.) Math 143
d.) Math 152
e.) Math 171
f.) INTRODUCTION TO COMPUTERS

For questions 2 and 3, please indicate the Extent of agreement (SA-SD)
Strongly Agree
Agree
Disagree
Strongly Disagree

2. The instructor seems present and engaged in this online course.
3. I feel present and engaged in this online course.

4. What final grade do you expect in this online course?

A
B
C
D
F
W

The next set of questions is about your one-to-one interaction with the instructor of this online course.

5. How many times have you interacted one-to-one with this instructor this semester, no matter the type of interaction (e.g., email, phone/video, in person, online posts/chats)?

A. Never
B. Once
C. Two to three times
D. Four to five times
E. More than 5 times

6. Indicate your agreement with the following statements about your interaction with the instructor.

- I am satisfied with the amount of interaction I've had with the instructor.
- The interactions I've had are positive and supportive
- The interactions I've had were meaningful to my learning of the course material
- The interactions have helped to build a rapport/relationship with my instructor

---

The next set of questions is about specific types of interactions with the instructor of the online course.

7. Did the online instructor respond to your individual posts in the online discussion forum?

Never, once, more than once

If yes:
Describe the nature of the response(s): _____
Indicate the extent to which you agree with each statement about your online discussion interaction with the instructor.
7a.) The interaction was positive and supportive.
7b.) The interaction was meaningful to my learning of the course material
7c.) The interaction helped to build a rapport/relationship with my instructor

8. Did you ever interact with your online instructor through email?
Never, once, more than once
If yes:
8a.) Who initiated the email interaction? Instructor; student; both
8b.)Describe the reason(s) for the email interaction: _____
Indicate the extent to which you agree with each statement about your email interaction with the instructor.
8c.) The interaction was positive and supportive.
8d.) The interaction was meaningful to my learning of the course material
8e.) The interaction helped to build a rapport/relationship with my instructor

9.) Did you ever interact with your online instructor in person (face-to-face)?
Never, once, more than once
If yes:
9a.)Who initiated this face-to-face interaction? Instructor; student; both
9b.) Describe the reason(s) for the face-to-face interaction:

_____

Indicate the extent to which you agree with each statement about your face-to-face interaction with the instructor.
9c.) The interaction was positive and supportive.
9d.) The interaction was meaningful to my learning of the course material
9e.) The interaction helped to build a rapport/relationship with my instructor
10.) Did you ever interact with your online instructor by phone or video conference?
Never, once, more than once
If yes:
10a.) Who initiated the phone or video conference? Instructor; student; both
10b.) Describe the reason(s) for the phone or video conference interaction:

_____

Indicate the extent to which you agree with each statement about your phone or video interaction with the instructor.
10c.) The interaction was positive and supportive.
10d.) The interaction was meaningful to my learning of the course material
10e.) The interaction helped to build a rapport/relationship with my instructor

Finally, we are interested in your broader perceptions

11. In your experience at this college, how does interaction with instructors differ with online versus face-to-face courses? Please elaborate and provide examples below.

Please answer the following demographic questions to describe yourself.

1. Are you eligible for a Pell grant based on your FAFSA, even if you are not currently receiving the grant? Yes or no
2. How do you identify your gender? Check all that apply:

Cisgender* woman.
Cisgender* man
Gender non-binary
Transgender
Another gender identity (fill in the blank): _____

*definition: of, relating to, or being a person whose gender identity corresponds with the sex the person had or was identified as having at birth

3. Age

a.) 18-20
b.) 21-29
c.) 30-39
d.) 40 or older

6. What is your racial/ethnic identity? Check all that apply.

a.) American Indian or Alaska Native
b.) Asian
c.) Asian/Pacific Islander
c.) Black or African American
d.) Hawaiian/Pacific Islander
e.) Hispanic
f.) White
f.) other race (please specify) _____