

Fall 12-15-2018

The Role of Virtual Communication Platforms in Academically Supporting Post-Secondary Students

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Concordia University–Portland

College of Education

Doctorate of Education Program

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The Role of Virtual Communication Platforms in Academically Supporting
Post-Secondary Students

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Concordia University–Portland
College of Education

Dissertation submitted to the Faculty of the College of Education
In partial fulfillment of the requirements for the degree of
Doctor of Education in
Higher Education

K. Candis Best, Ph.D., Faculty Chair Dissertation Committee

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Concordia University–Portland

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Abstract

While many consider college students to be digital natives, who are at ease with multiple forms of technology, many of these students do not adapt these skills for academic purposes. Retention concerns for college students often prompt support staff to seek out and adopt technology approaches to promote completion. This study provided a virtual learning platform to deliver academic support and sought to promote learning community interaction for rural and urban post-secondary students. A subset of vocational major programs that prepare students for employment after completion served as a participant pool. However, participants in the study chose not to use the resource and the researcher then refocused the study as a case study. Research questions focused on the role of virtual learning communities for college students, how virtual learning communities support academics, how students use virtual learning communities and their technology preferences. The platform vendor provided interview transcripts from eight rural and four urban community college students. A thematic analysis revealed themes of communication, academics, support, and responsibilities. Further analysis resulted in parsing out technology as a major theme, with communication becoming a subset. Limitations of the study result from a convenience sample of rural and urban college students. Social learning and cultural practices provided a theoretical structure regarding belongingness and self-determination. Findings report students use social networking for personal and recreation purposes but did not adapt these resources for academic support. There are 14 figures and 38 tables in this study.

Keywords: digital natives, social media, academic support, tutoring, technology, virtual learning communities, community college students, social learning, case study

Dedication

This dissertation is dedicated to my husband Clayton Fosmire, my brother Charles Spencer, and my children Amanda Corbett, Jesse Fosmire, and Valerie Sherwood who have always believed in me and encouraged me in every way. I also want to thank the educators who have inspired me to question, consider, learn and grow throughout my life, Mrs. Julia Albini, Mr. Nolan Marciniac, Mr. Robert Schultz, Mr. Jonas Kover, Mr. Sam Hill, Mr. Thomas Zane, and Mrs. Irene Andrews.

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Chapter 1: Introduction

Surrounded by technology, communication is easy to access; however, the quality of that communication still relies on human interaction. Digital natives, students born after the inception of the internet, have unparalleled access to information and communication when compared to any previous generation of college students but using that technology for academia may not be a priority (Prensky, 2012). Access to information and the way in which information is sent to us has spawned a barrage of digital junk mail that clogs inboxes and clutters lives. The saturation of technology throughout our lives ultimately changes how we communicate and who gets our attention. Email, texting, social media, and websites are merely tools, and when used wisely can improve our lives.

Technology has changed most facets of the college student experience, ranging from online databases and learning management systems to online dating and social media. Today, college students can connect to the world instantly with smartphones, tablets, and laptops. This broad access to communication opens many options for how college staff members recruit, enroll, and support their students. However, campus technology investments are precarious due to the rapid and continuous advancements, which outdate applications quickly, causing ongoing expenditures in dwindling budgets (Robsham, 2017). Therefore, academic leaders must be cautious in their technology choices to meet the desires of students born into a wired world.

Many new college students, particularly underprepared students who often attend community and public four-year colleges, have relied on parents and high school staff to deal with deadlines and necessary paperwork and fail to adapt to the less personal contact options, or email notices that many colleges use (Russ, 2015). New college students are learning to manage their affairs and communication pathways but often rely on others to monitor important updates.

Further complicating the issue is the fact that tech-savvy students are fickle in their use of devices and programs. Most students will comply with instructor demands to utilize a learning management system or class-based applications, but some lack connectivity and access to appropriate devices (Crocker, 2014). Both instructors and students become frustrated when technological issues, such as accessibility, interfere with expected teaching and learning experiences. Many students rely on smartphones, with limited web functionality that makes it impossible to participate successfully in online assignments (Lo, Cho, Leung, Chiu, Ko, & Ho, 2016). The technology gap that exists between faculty and students causes communication problems that can reduce student learning opportunities and successful outcomes (Prensky, 2012).

Background, Context, History, and Conceptual Framework for the Problem

At the community college level, all students can gain access to higher education, but not everyone comes equally prepared for the demands of a college education (Karp & Bork, 2012). Some developmental students will have documented disabilities, offering objective feedback on how they learn best: However, the majority will arrive on campus, with no data regarding their learning methods, unsure of their next steps. Academic support professionals believe that all students can work to improve their skills and welcome all students regardless of their academic preparation (Ward, 2011). Although diverse in their preparation, these professionals often combine their love of learning with the practices found in education and psychology.

Background: Academic support through group tutoring. Historically, academics recognize the platonic approach as the actual path of scholarship (Hugh & David, 2016). However, modern day versions of this concept have lost standing on campus, perhaps through their reluctance to tie student-learning outcomes to their services (Garfolo & L'Hullier, 2015).

Academic support professionals emerge from a variety of backgrounds, including education, liberal arts, and psychology (Toms & Reedy, 2016). The Council for the Advancement of Standards in Higher Education (CAS), (2015) states that academic support professionals must hold a graduate or professional degree in a field relevant to their position or possesses a combination of educational credential and related work experience. The CAS accreditation body recommends that academic support professionals possess content knowledge, learning theory constructs, and excellent interpersonal skills that allow for flexibility in serving students with diverse needs (Wells, 2015). Many academic professionals serve in ancillary roles, sometimes as adjunct instructors or on a part-time status, which results in a lack of identity within the campus as true educators (Whitchurch, 2012). Full-time faculty and staff are unsure of where this group belongs in the academic structure (Ward, 2011). The presence of academic support is a reminder that student learning occurs both outside and inside the classroom, and even comprehensive student services programs cannot address all student problems. Although academic support office staff fill the gap between academics and student services, full-time faculty may see these staff as ancillary and fail to recognize their utility (Whitchurch, 2012).

Context: Academic support services. Colleges must move toward greater accountability, especially as it relates to the use of federal funds to support student grants and loans (Garfolo & L'Hullier, 2015). However, the remedial needs of incoming student populations, particularly in community colleges, demand more aggressive interventions to support underprepared students (Honshu & Paulson, 2013). As college retention staff struggle to find what works for their developmental students, academic support offices, and tutoring programs take on greater importance. Historically, these important campus resource personnel have focused on assessing what they do rather than how they affect student-learning outcomes,

resulting in credentialing bodies demanding reports of student learning outcomes, based on center practices rather than a list of offered services (Wells, 2015).

Getting students to use support services has been challenging at the college level. Past practices of flyers and classroom visits are examples of what academic support centers produce, but these outreach efforts fail to tie to student learning outcomes (Wells, 2015). Encouraging students to seek out tutoring actively requires academic support center staff to adopt proactive approaches in attracting students to use their services (Toms et al., 2016). Supplemental Instruction (SI) programs identify classes with historically high failure or attrition rates. SI program personnel embed tutors in the classroom and further support students by offering group tutoring sessions (Dalton, 2011). The realization that students have shared concerns regarding a difficult class helps students bond in their struggle; therefore, many of the students who voluntarily attend SI tutoring are good students who want to do better. Getting students to use tutoring is always challenging, but engaging at-risk students to use tutoring is even more difficult (Tinto, 2012). Augmenting tutoring with social media support offers a new way of engaging students.

While elite colleges' admission personnel handpick their students and can choose those with sound academic skills and high levels of motivations, community colleges are driven to recruit students who are less prepared, creating a larger and needier developmental student population (Holschuh et al., 2013). Many students who attend community colleges fall into at-risk categories, exposing them to higher rates of failure and attrition (Tinto, 2012). Half of these students will not complete their program, and male students in particular face even higher dropout rates (Windham, Rehfuss, Williams, Pugh, & Tinceher-Ladnew, 2014). With these high attrition rates, it is clear community colleges' staff must develop more aggressive academic

support programs. Proactive measures that attract students to using tutoring supports, particularly in programs that serve primarily male students, are wise investments (Windham et al., 2014).

Effective communication. College administrators create communication systems to support their institutions' interests, forcing students to participate in that format or risk exclusion from important information. If college staff could use technology to find effective ways to facilitate communication with students, digital natives might be more receptive, and many problems would be solved. Many college administrators have invested in campus-wide emails and text-based push notifications to update students on policy, events, and even grades (Ritchey, 2018). New students arrive on campus used to having parents or high school teachers manage their important communication. Transitioning into adults, who independently take care of business, is a work in progress for these students. Unfortunately, at-risk students who frequently attend community colleges, because of open admission policies, tend to dismiss these messages; emails and text blasts are ignored, and students remain unaware of important deadlines and opportunities (Gikas & Grant, 2013). Colleges are essentially talking at, rather than to students. Seeking out face-to-face meetings with instructors, or contact staff to may solve the issues that occurred due to failure to respond to emails and a lack of effective communication practices; however, students who fail to persist often become attrition statistics. Technology is not the problem here; ineffective, one-way communication, delivered electronically does not improve the situation.

Ineffective communication causes problems: Students enter college and expect success, but many will not complete their programs or earn their degree; resulting in what appears to be a lack of accountability on the part of the college (Touryalai, 2013). This fact has caused federal

lending programs to pressure accreditation bodies and prompted college administrators to raise their completion and employment outcomes (Middaugh, 2010). College administrators focus on improving student completion rates under increased censure by accreditors and politicians (Spaid & Parsons, 2014). Effective student retention and completion strategies are necessary to achieve increased completion. Getting students to use the academic supports that aid retention and completion is an ongoing struggle for college staff (Russ, 2015).

Retention concerns. Classroom seats are also getting harder to fill, and even harder to maintain for many community colleges. Retention rates for returning students are lower than expected causing college admission staff to use aggressive recruiting techniques for out of county students as local populations produce fewer college-bound students (Marcus, 2017). As a result, more students become retention risks, furthering the need for true academic support intervention.

These students wind up paying out of county surcharges, housing, and meals plans that rapidly deplete their student aid and grants; requiring them to take on loans to pay for school (Chuck, 2015). Academic dismissal compounds these students' financial problems since now they have encumbered student loans and need to take low paying jobs that do not require college credentials to make payments on that debt. Empty seats also put a burden on college budgets balanced between a minority of state and local contributions with a heavy reliance on students, who pay the balance with their tuition and fees (Smith, 2017).

The State University of New York, SUNY is one of the most extensive education systems in the United States and conducts a broad range of oversight within programs (SUNY and the Seamless Education Pipeline, n.d.). Currently, there is a focus to improve completion by assuring credits transfer seamlessly throughout the system (SUNY Office of Communication,

2015). However, students must complete their course-work with transferable grades of C or better to get recognition or credit at another institution: For some community college students, meeting this minimal standard is beyond their reach.

Community colleges are committed to helping their students: these institutions focus on teaching over research (American Association of Community Colleges, 2016). Campuses invest in positive programming by hiring young college graduate professionals as advisors and staff who are prepared to guide students in the right direction (Ward, 2011). These young professionals most likely belong to the group who complied with expectations and followed all the advice they received, unlike the distraught students who seek out their services: This perpetuates the gap in developmental student's needs and college's response to the situation (Holschuh & Paulson, 2013). Eventually the conversation between the advisor and the student will turn to grades, student expectations, and finally support options through academic support and tutoring.

The problem for these students occurs on many levels. These students arrive unprepared for the academic workload and expectations, potentially failing to adjust to a time management schedule of a college semester, which can put them behind quickly. Overwhelming social opportunities consume a lot of time, and students do not self-identify their problems; but rely on the colleges' catchment system to notify them when doing poorly or not attending classes (Di Tommaso, 2012). By this time, the midterm point is approaching, and so much damage has occurred that students may have to withdraw from college to maintain an acceptable grade point average (GPA) to continue next semester. Students may not be familiar with internal practices regarding academic progress and do not realize there are potential solutions to support them (Laskey & Hetzel, 2011). There are many points in this tale of woe where a small change could

have made a big difference (Di Tommaso, 2012). Assuring message delivery using a more facilitative technology could improve communication.

Achievement in college involves learning the role of a successful student, including time management. One supportive strategy involves pairing struggling students with successful peers or upper-class mates, within their curriculum, which could provide guidance and structure for college success (De Backer, Van Keer, & Vlacke, 2015). Working more personally with an advisor, early on, can result in more accurate placement in classes geared toward developing the student's abilities thereby creating a more significant opportunity of working within the scope of the curriculum and passing the course (Tinto, 2012). In addition, walking into a class that has an embedded tutor with weekly scheduled hours would provide a friendly face to connect with to ask questions. In high school, students learned to deal with problems, asked for help, and relied on adults for solutions. Many of today's students have experienced parental management of their affairs, resulting in a lack of practice in making decisions and facing the consequences. They expect others to problem solve for them, including trouble at college (Bips, 2010). Academic support center personnel realize that they need to connect directly with students, not parents, to set up successful practices rather than minimal class participation, and the earlier students learn useful academic skills, and the better chance they will have for success.

Academic support. Encouraging interaction in virtual learning communities relies on communication skills. Communication skills have weakened due to fewer interpersonal opportunities, and students have learned to rely on more on remote contacts through digital technology (Turkle, 2015). Understanding the needs of today's digital natives can prove frustrating to instructors who are digital immigrants, but frequently need to adjust their communication for web-using students (Prensky, 2012). Many current students expect a rapid

response to their inquiries both day and night (Bowen & Guthrie, 2013). Incorporating digital technology into staff retention practices is vital in connecting with students, who prefer to communicate via smartphones and tablets (Margaryan, Littlejohn, & Vojt, 2011).

Communicating using peer-to-peer connections, both in person and virtually, may help to improve interactions since both parties are at ease with technology use.

College recruiters are aware of digital trends and take advantage of this form of communication to scout future students locally and remotely (Martin, 2015). Eager young college students are attracted to the open enrollment policies and a lower price point of community colleges but are often lacking both achievable educational outcomes and realistic employment goals (Holschuh et al., 2013). Meanwhile, many parents and students have adopted a consumer approach to education, focusing on the credential rather than the learning (Mcardle, 2012). As a result, unprepared students focus on minimum standards for completion rather than learning.

Underprepared students, lacking college-level skills, remain either under-employed or unemployed, failing to fill the job market needs. Extrapolating the loss of income potential for dropouts from community college shows that these effects influence larger socioeconomic concerns, such as loss of potential income that could shift more tax revenues back into the economy (Schneider & Yin, 2012). Retaining current students is financially wiser than hoping to replace those who drop out with new faces. Delivering effective academic support services to struggling students can assist with student success that helps all parties achieve their goals.

Academic success programs. Traditionally, academic success personnel create programs that combine academic resources, study skills information, and tutoring (National Tutor Association, n.d.). The primary deliverable is access to helpful information, along with a

diagnostic analysis of problem areas, and developing manageable goals to become successful. Academic program staff is proud of what they do and often documents their efforts through reports of services or presentations, focusing on delivery of services rather than the impact on students. Proving academic success staffs' programs are making a difference for students and their learning outcomes involve planning for ongoing student-learning improvements rather than focusing on departmental performance objectives (Garfolo & L'Hullier, 2015). Budget-strapped academic success personnel must meet the demands of increased retention initiatives and assure that each program produces results in improved student learning outcomes, increased retention, and successful college completion.

Academic professionals live with the reality of doing more with less today, especially when empty seats affect budgets (Jaafar, Toce, & Polnariiev, 2016). Tutoring center employees have traditionally encompassed a range of professional to peer delivery, along with offering services from a drop-in basis or a more personal appointment only schedule. Securing an external grant to supplement declining budgets is one way to balance needs with costs. Perkins grants offer support for technology and career students and relieve strained budgetary woes in academic support programs. Carl D. Perkins grants support the development of new ideas and solutions for career and technical programs: These funds must support vocational programs, specifically lab related offerings (Association for Career & Technical Education, 2016). Unanticipated benefits discovered in restructuring a tutoring program to group delivery unveiled a workable platform that was both cost-efficient and produced improved student-learning outcomes for groups of students.

Aligning students with academic support through technology. The typical community college student often favors communicating through their electronic devices; student's eyes

check smartphones frequently. Many students work and play on tablets and some sit side by side with peers but interact via text or chat. Meanwhile, college services staff utilize posters and flyers to advertise services and resources; however, students pay more attention to information received via email, or on their cell phone than notices on bulletin boards. The same is true for personal messages and other college communications (Prensky, 2012). The current student population arrives on campus as digital natives, those who have always had the presence of technology in their lives, forced to use primitive communication methods by digital immigrant instructors (Czerniewicz & Brown, 2013 & Prensky, 2012). Social media also plays a significant role in the lives of digital natives and when employed creatively and selectively can enhance academic pursuits.

Digital natives are less responsive to the ancillary sites and study tools created by publishing that leave out the social connectivity constructs (Paxhia, 2011). Creators of new platforms struggle to find a balance between academics and social media in maintaining academic focus and connectivity advantages. Top social media sites, such as Facebook, connect users both each other and the advertisers that support Facebook investors. When using social media to support academics, digital advertisements can distract students easily; therefore, a more contained platform is desirable. As options grow for social media platforms, it is increasingly more important for academic support staff to establish the benefits of tying instruction and resources to these sites. Students who frequently use social networking platforms often engage in multitasking, which can decrease cognitive efficiency (Junco, 2012). Usage analysis can help academic support programs to decide if an investment in social media delivers the information, support, and resources necessary to create functional learning communities.

Statement of the Problem

Current students enjoy access to technology and digital resources to access information offering colleges a new format to communicate valuable information and provide support. Colleges must adapt their communication and support options to include more digital content, such as virtual communities to capture their students' attention and deliver relevant content and resources. As students bring their digital skills to colleges, staff must adapt to include increasing digital interaction, to modify communication methods to be cell phone and tablet friendly, to provide links to resources, and to offer tutor support digitally (Prensky, 2012). Using student tutors who are already digital natives to construct virtual communities takes advantage of the skill sets inherent in the student population but lacking in the digital immigrants who staff current academic support programs and work as instructors (Bowen et al., 2013). While college instructors from previous generations underutilize social networking and online interactions, millennial students welcome a familiar method of connecting with peers (Ainin, Naqshbandi, Moghavvemi, & Jaafar, 2015; Oblinger, 2003). Although students tend to follow the lead of their instructor with regard to technology adoption, use is limited for software products (Margaryan et al., 2011; Paul, Baker, & Cochran, 2012). Hence, instructors may need to model better technology inclusion to encourage digital exploration for their students.

Digital culture. Instruction also involves social/cultural aspects of learning. The current digital modes of communication found in cell phones and social media challenge instructors' classroom practices and offer new ways of interacting with students (Prensky, 2012). Students often need help evolving their digital skills to include academic use and are often amazed that they can use sites such as *YouTube* to learn French verb conjugation rather than just for entertainment and take advantage of virtual learning communities to connect with classmates on

academic topics (Creighton, Foster, Klingsmith, & Withey, 2013; Czerniewicz et al., 2013).

Instructors have a prime opportunity to demonstrate how useful internet resources can be and to incorporate web-based support in their classes.

Educators' knowledge sets range from nonexistent to a few who were skilled in adapting their practices toward current technology capabilities. Students who use texts and emails to stay informed appreciate their instructors providing easy access to information and rely on their communication devices to access college resources (Prensky, 2012). Some students are so overwhelmed in their daily lives with academic and personal responsibilities that their only socialization with others is virtual (Oblinger, 2003). Essentially this eliminates both the location and time barriers dealt with in providing student support (Prensky, 2012). Providing virtual learning communities can aggregate student communication and take advantage of the students' network when they are engaged in the platform (Dzvaptsva, Mitrovic, & Dietrich, 2014). The real utility of a VLC is the actual use of two-way communication rather than just informative posts on the part of academic support programs.

Combining the social aspects of digital communication with academics leads to the application of the social-learning-theory construct. When learning occurs online, students who are at ease with accessing digital information have the advantage of practice in using electronic resources (Oblinger, 2003). Classroom dynamics also change to accommodate online participation. While it may be possible to *hide in the crowd* in a traditional classroom, active participation is essential in online settings. Traditional lecture formats rely on the instructors' delivery and knowledge base where students absorb and reiterate facts, figures, and functions. Online classes rely on a social learning structure that demands both a preliminary opinion and a thoughtful response to professors and peers (Hart, 2012). Rather than memorizing and testing,

critical reflection based on feedback promotes cognitive growth. Online academic support occurs outside the influence of the instructor making student participation independent and voluntary.

Purpose of the Study

The purpose of this study is to discover how students use virtual communities for academic purposes, to investigate their preferences, and to identify their disinclinations regarding social networking as a communication tool for academic support. Identifying virtual communities that support student success can help colleges to focus their efforts on more useful tools that provide real and timely support. Identifying student barriers to technology can inform academic support staff and their practices.

Research Questions

Primary. What role do virtual community platforms play in academic outcomes for students at public post-secondary institutions?

Secondary. How do students at a two-year public institution use virtual community platforms to support their academic performance? How do urban and rural post-secondary institutions compare in their use of virtual community platforms to access academic and social support? What kinds of services and information do post-secondary students at public institutions want delivered through technology?

Definition of Terms

Education settings can vary greatly in how a word is used. Within educational settings, expressions become tailored to meet specific locations and program needs. Table 1 clarifies how terms were defined as they were used in this research.

Table 1

Definitions of Terms

<i>Term</i>	<i>Definitions within the parameters of this study</i>
<i>Academic support centers</i>	Academic success centers are college campus programs that provide academic resources and tutoring services for all students enrolled on campus (Arendale, 2014).
<i>Community college</i>	A community college is an associate level higher education that offers training, certificate, vocational, and transfer-oriented degrees, typically over a one to two year period (American Association of Community Colleges, 2016).
<i>Learning Management System</i>	Online course facilitation which allows asynchronous, or delayed participation in classes and provides access to web based resources (Mbuva, 2014).
<i>Platonic/Socratic approach</i>	When educators employ a question-based approach to “challenge and support” learning for their students while scaffolding the learning process (Hugh & David, 2016).
<i>Social networking sites</i>	A variety of publically available digital platforms, that facilitate social connections and resource sharing such as Facebook or Instagram (Prensky, 2012).
<i>Student-learning-outcomes</i>	Measures of learning that result in improved abilities and being able to meet a program’s academic standards (Garfolo & L'Hullier, 2015).
<i>Supplemental instruction (SI)</i>	Supplemental instruction is a form of group tutoring that targets specific classes with high levels of attrition or low grades (D, W, or F) which involves both academic and social supports.
<i>Virtual community</i>	An online format that provides communication and social network opportunities (Prensky, 2012). Within this study virtual communities exist in academic learning management systems and social networking sites such as Facebook and Instagram.
<i>Virtual learning community (VLC)</i>	An online format that provides communication and social network opportunities to a group of mutually interested learners and educators (Shen, 2015).
<i>Vocational programs</i>	Within this study, vocational education refers to college programs designed to teach specific trade skills such as electronics or nursing. (Association for Career & Technical Education, 2016).

Assumptions, Delimitations and Limitations

The context of this study exists within certain assumptions, delimitations, and limitations. Assumptions relate directly to the vision of the researcher in the study. The researcher in structuring the study parameters imposes delimitations, which define the limits for the study. Limitations occur beyond the control of the researcher, but must be included in considering results.

Assumptions. There were assumptions within the study. The researcher believed the participants were truthful and would participate within the consent guidelines they signed at the beginning of the study. It was assumed that students understood why they were participating in the virtual community.

Delimitations of the research design. The student population was limited to vocational students because of the reliance on Perkins funding which limits expenditures related to career and vocational majors and supports tutor salaries. This population also offered a more community-based aspect related to class requirements and limited class time offerings shared by all students in the program, resulting in more time spent together as a cohort.

An outside vendor conducted interviews with students to remove the influence of the researcher, who is familiar to many students within the sample, in gathering student input. Since an outsider conducted the interviews, it was within the researcher's power to establish limits regarding how the interviews were conducted. The interviews included students from different public institutions who were similar in their commuter status. Tutors and the researcher scheduled observations around pre-exam dates in hopes of greater student turnout; cancellation occurred when less than three students attended the tutoring session.

Limitations of the research design. Limits in this study involve the use of original data collections based on a convenience sample from one community college in a rural location and an urban four-year post-secondary institution. The rural population is also constrained to only first semester, vocational majors pursuing an Associate of Arts (AAS) degree who are typically career rather than transfer bound.

The Self Determination Scale (SDS) pretest provided data on motivational factors that may have influenced some students to seek out tutoring as compared to others. Extrinsic factors such as family responsibility and employment played a role in students seeking out and using tutoring (Di Tommaso, 2012). Virtual learning communities offer an incentive for using tutoring but may serve as an alternative to attendance if students find the answers they need outside of the tutoring session. In some cases, students' connectivity to the internet can be sparse or nonexistent in rural areas thereby limiting their ability to participate outside of campus (Creative Research Systems, 2012).

Summary

Developmental students face challenging circumstances upon entering college. Consumer-oriented viewpoints of students and parents lower the expectations for college performance to marginal passing criteria. Connecting students with resources can be difficult and often fails to deliver timely and meaningful support when needed the most (Fain, 2012). Providing academic support in both live classes and virtual learning communities may help to create stronger student networks and personal connections (Di Tommaso, 2012). Group tutoring can help to reduce negative stigma and increase use of tutoring services (Qureshi et al., 2012; Russ, 2015). Inclusion in a VLC may help to increase a student's sense of belonging in a group and increase the instances of communication and collaboration (Barrett Jr, 2011).

In Chapter 2 the researcher explored the literature and historical content regarding student academic support and virtual learning communities. The attributes discovered in Chapter 2 were operationlized in Chapter 3. In Chapter 4 the researcher presented and analyzed the data from the study. The results were summarized and reported in Chapter 5.

Chapter 2: Literature Review

The literature review offers a historical view of the current state of affairs in academic support and the use of technology to support student learning. As students become more reliant on technology for communication it is wise to evaluate how this can be incorporated into student academic support programs (Bowen & Guthrie, 2013). Exploration of social theories in relation to the college learning are also included in the review.

Introduction to the Literature Review

Chapter 2 will provide a conceptual framework, which offers, an understanding within the theoretical perspective in the literature. This section will define the study topic, its context, significance, the current problem statement and the organization of the review as suggested by Machi and McEvoy (2012). This information will build the conceptual framework for the study.

Study topic. Academic support includes a wide variety of services ranging from advising to tutoring (Arendale, 2014). This study will focus on augmenting group tutoring through a virtual learning community (VLC) platform. Tutoring often occurs in an intimate setting with one or two people, based on assistance with specific coursework (National Tutor Association, n.d.). The unique construct in this study borrows the proactive stance of supplemental instruction that identifies difficult courses and provides a variety of peer-assisted academic and social support throughout the class (Jones, 2013).

Context. Examining the current state of practice in providing academic support for college students varies across institutions, based on the needs of students within a given setting (Arendale, 2014). This study looks specifically at academic support practices in public post-secondary settings. Familiarity with technology and its incorporation into academic support also

varies across institutions (Bowen & Guthrie, 2013). This study will examine the presence of a social media platform as a vehicle for academic support.

Significance. Assisting students to reach their educational goals is always at the forefront of academic support programs (Wells, 2015). Academic support staff members continuously seek ways to improve communication and promote the use of tutoring programs to deliver quality services that help students succeed (Toms et al., 2016). Blending the convenience of online learning management systems and virtual learning communities with the technological skills of digital natives provides a logical match for skill sets and academic support (Chang, 2012). Incorporating technology into academic support offers easy access in a familiar medium that could increase the use of group tutorial services. It could also save on program expenses for individualized tutor sessions (Bowen et al., 2013).

Problem statement. There is a communication disconnect between current college students and the faculty that serve them. Technology use among these new students, who are considered digital natives, has increased the use of social media within college classrooms (Prensky, 2012). However, faculty still relies on straight lecture and face-to-face interactions with students (Laskey & Hetzel, 2011). Further exacerbating this dilemma is the need for remedial support for underprepared college students who are reluctant to seek out academic support (Russ, 2015). There is a need to explore this disconnect and to understand how realigning student, faculty, academic support staff to benefit student success.

Organization. The literature review will first define the conceptual framework for the study, focusing on Bandura's social learning theory, Vygotsky's social cultural theory, and tutoring and technology practices in college education settings. Next, the review will focus on the literature and methodologies found in social aspects for supporting student academic success,

identifying successful and problematic approaches in this field. A synthesis of the research findings will help to describe the current state of practice. Critical review of the current practices will be examined to situate the approach of this study. Finally, a summary of the literature and the application of the research in the current study will form the framework.

Conceptual Framework

A conceptual framework combining concepts from Bandura's social learning and Vygotsky's sociocultural theory forms the basis for researching tutoring enhancements in virtual learning communities. Aspects of the social learning theory discussed in this study provide an understanding of academic readiness, academic demands, academic support, peer interactions, critical reflection, and social integration. Elements of sociocultural theory as it relates to this study include family environment, responsibilities, poverty influences, and college experience. Technology topics combine connectivity, effective communication, social media, social networking, virtual community building, preferences, and campus use. The social and cultural aspects of community colleges in supporting social learning, learning communities, and group belonging plays out in retention concerns (Dalton, 2011). This chapter provides an overview of the methodological approaches within the study, a synthesis of the research findings, and finally a critique of the previous research.

Research builds new foundations and concepts within the footprint of previous work. In this study, the theories and methods found in psychology and education provide a structure for integrating social media into academic support (Hammersley, 2012). Critical reflection through social interaction helps to promote cognitive growth and social learning theory helps in understanding how group dynamics influence academic success (Qureshi et al., 2012). Vygotsky's sociocultural theory can be applied to explain how the influence of family, peer, and

community shape a student's sense of belonging in academia during the first-year of community college (Windham et al., 2014).

Technology provides web-accessible connectivity offering opportunities for more timely and effective communication practices than a standard date book or calendar. Student preferences and uses relate to the social and cultural practices they have experienced in using technology for academics. The interaction of these theories and practices creates an opportunity to explore the integration of how we learn, emerging technology supported within the academic culture, and the advantages of a popular modality to communicate more effectively. Figure 1 displays the interaction between social learning theory, sociocultural theory, and technology application

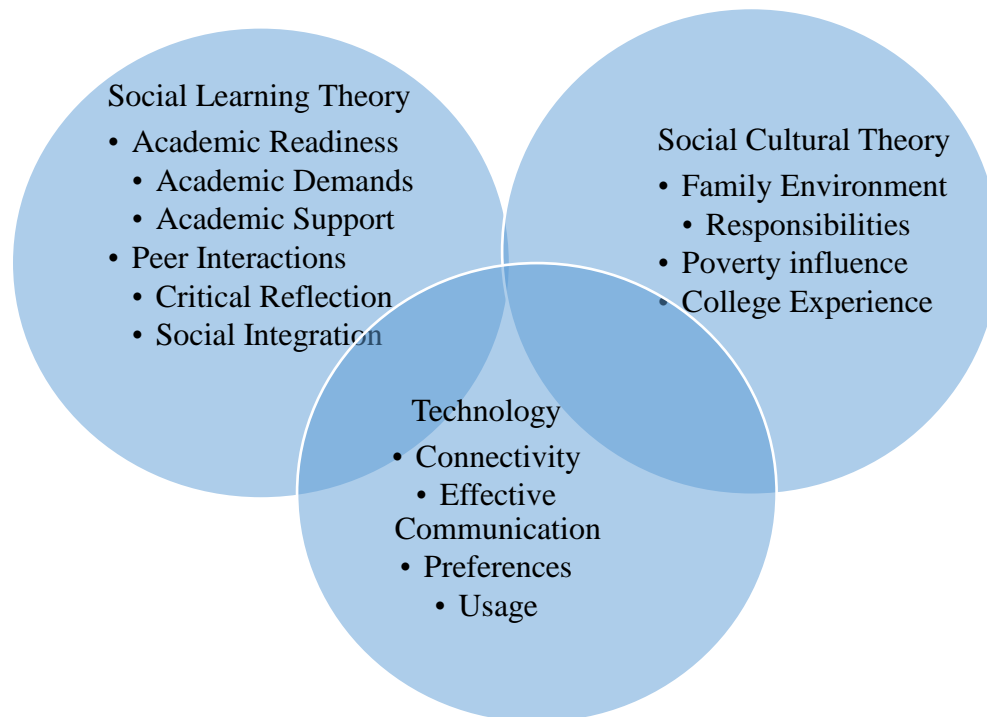


Figure 1. Venn diagram of Theoretical Approaches Integrated with Technology

Social learning theory. Psychologists and their schools of thought discovered, in the late 1960s, that a theoretical gap existed between knowing what people do and why they do it (Gredler & Shields, 2008). Social learning theory evolved out of the disagreements regarding

human actions and motivations from psychodynamic and behaviorism approaches (Wulfert, 2013). Recognizing the discrepancy in understanding this dilemma, between psychodynamics and behaviorism. By 1977 Bandura developed the social learning theory. Bandura postulated that while people watch other humans, they evaluate the subsequent consequences of human behavior and they, in turn, make cognitive adjustments to their behavior based on what they observe (David, 2015). Today, most psychologists see a middle ground for recognizing the nature/nurture debate reflected in the tenets of social learning theory (Cook & Cook, 2009). The argument for cognitive thought is typically understood, especially through the lens of social learning theory, as one of having agency and understanding behavior in part driven by our thoughts and experiences (David, 2015). Bandura (1977) acknowledged environment as having reciprocal relationships with personal thought and behavior.

Although Bandura and Vygotsky understood cognitive development from very different experiences and cultural backgrounds, their shared focus on internalization of experience, and improving cognition evolves in their separate works throughout the latter part of the twentieth century. Each theorist incorporated personal experiences within the development of their research and reflected the own social learning influences. Bandura (1977) was influenced by Piaget's work, and agreed on the importance of assimilation in constructing knowledge, but incorporated the importance of modeling, reflection, and improved critical thinking through social learning (Cook & Cook, 2009).

Bandura. Later in the 20th century, small-scale schooling experiences in Bandura's life provided a communal aspect for education, within which, he learned to value cognitive self-assertiveness, or self-directed learning as a tool for intellectual growth (Cherry, 2017). Bandura wanted to incorporate both the internal processing mechanisms found in psychodynamics with

the predictability of behaviorism. Problems existed in understanding how individuals developed their cognitive effect. Bandura believed psychodynamics often labeled behaviors as traits, which were the equivalent of “description in the guise of explanation” (e.g., he is anxious because he is anxious) (1977, p. 2). Questioning what occurs between the stimulus and the response; Bandura examined the mechanics, during the interplay of experience and learning and appreciated the complexity of the cognitive processes involved. By 1986, Bandura would change the name of his work from social learning theory to social cognitive theory to reflect the importance of cognitive process related to observations and behavior (Cherry, 2017).

While Bandura’s work aligns with a behavioral approach, the author strongly disagreed with significant aspects of behaviorism (David, 2015). The behavioristic approach hinged on environmental stimuli so strongly that these researchers viewed humans as passive in the learning process, Bandura (1977) realized that internal cognitive changes, within the individual, had to occur to follow a model’s lead. Indeed, humans do not replicate every modeled behavior, even when rewarded; they evaluate, amend, and integrate experience when deciding to adopt an act according to Bandura. This integration involves a synthesis of the observed experience, consideration of perceived consequences or punishment, and lessons learned in the past (Wulfert, 2013).

Humans must develop rapid reactions to dangerous situations to survive. Another problem with the behavioristic approach arose for Bandura regarding the time learning would take in a trial and error process (Bandura, 1977). Teaching students individually may require many attempts, but an effective model can quickly teach an entire group a potential response (Wulfert, 2013). Watching a person become ill or dying after receiving a snakebite is enough to let others know to avoid snakes, no formal lesson is required. Some of these lessons are so

impactful that they continue even when there are no potential dangers present (Buss, 2004). Biological premises also play a part in cognitive development; a person must be capable of encoding and storing new information to learn effectively (Cook et al., 2009). Evolutionary selection processes have sculpted humans over generations, in turn influencing the cultures they create and their experiences. Some genetic adaptations result in unexpected differences, such as sensory limitations or atypical physical development, and can hinder replication of stimulus input, and discourage adaptation of multifaceted cognitive process, involving a readiness to learn and effectiveness of the model (Bandura, 1977; Buss, 2004). These occurrences contribute to the complexity of social cognition.

Within this study, the elements social learning theory provide an understanding of how people learn in the spaces they interact with others socially. Peer tutors served as models by posting weekly information both in learning management systems available to the students, Blackboard and CollegeQorps, in the hope of encouraging student interaction on the platforms. However, the perception of the student is vital in this process and "the failure of an observer to match the behavior of a model may result from any of the following: (a) not observing relevant activities, (b) inadequately coding models' events for memory representation, (c) failing to retain people, (d) and ability to perform, or any experience-insufficient incentives." (Bandura, 1977, p. 29) Social learning and sociocultural deficits are evidenced by college students facing challenges such as having the intellect to participate in higher education but lacking the environmental supports causing them to struggle in their studies.

Community colleges create social learning experiences within their population, whether it occurs on campus or off. Social programming helps students to develop their peer support system which is essential in establishing a community of learners: however, some students have

difficulty with this task (Di Tommaso, 2012). Viewing effective social interactions is especially important for developmental students, who may have experienced negative peer relationships in the past, causing them to be reluctant in relying on the help of other students (Holschuh et al., 2013). Academic support centers work to connect students with appropriate peer role models through peer tutoring.

Tutoring is a social construct that evokes a range of responses from students needing academic support (Qureshi et al., 2012). Typically, the tutoring situation takes in place in intimate, one-to-one, sessions with either peer or professional tutors, who provide personalized analysis of students' learning needs. Some students feel that working one-to-one provides the best level of service for their learning needs, while others have difficulty working with peers to resolve educational issues and prefer a professional tutor (Fain, 2012). Often the preferences align with whether the students need a review of concepts on a teaching level or assistance in task completion, with peers providing this second level of support (National Tutor Association, n.d.). For many, the intense nature of one-to-one tutoring can feel overwhelming and stigmatizing.

Learning to navigate peer relationships successfully is essential in college and life. When students fail to integrate into established learning communities, they tend to become isolated, which becomes a retention risk factor (Di Tommaso, 2012). Social learning theory shows us that learning occurs not only through personal consequences but by watching how those around us behave in relation to their circumstances (Cook et al., 2009). Classrooms are perfect settings for studying student responses and group interaction.

Classrooms are dynamic, and it is easy to see that some students understand how to succeed in this environment, while others struggle. Potential student role models usually belong

to the group that understands the unwritten rules of the game. Peer tutors provide comprehensive support because they understand both the content of a subject and expectations of the instructor (Russ, 2015). Tutoring takes many forms, from one-to-one sessions to group study sessions with a peer or professional tutor.

Asking for help can be frightening, and may stop students from seeking out the help they need; forcing them to rely on less effective sources of help (Di Tommaso, 2012). Group tutoring can reduce the stigma of asking for help because one need only show up and others are participating, signifying acceptance for this form of support (Russ, 2015). How these groups form and how well these groups function can depend on the internal culture of the group: who participates and who facilitates group functioning.

Sociocultural theory. Social interaction provides a basis for an individual's cognitive growth based on their experiences. Sociocultural theory both places the individual within their environment and mirrors the expectations for behavior in that context (Havnes & Prøitz, 2016). Soviet psychologist Vygotsky was born in 1896 during the Soviet Revolution and influenced by the socialist views of Marx, in that success for the individual builds a prosperous nation (Gredler & Shields, 2008). Vygotsky believed that learning occurs during social interactions and therefore plays a vital role in making meaning out of experiences (McLeod, 2014)

Vygotsky's work became popular in 1962 when translated into English (van der Veer & Yasnitsky, 2011). Vygotsky was an influential thinker in the field of psychology; whose contributions were limited due to premature death in 1934 from tuberculosis (Psychology Notes HQ, 2018). Cultural aspects influence cognitive development in children, recognizing the artifacts that surround us, in turn, shape our process of learning (Shalin, 2017). In the sociocultural theory, Vygotsky posited that children learn to think and behave through imitation,

instruction, and collaborative learning by watching experienced models in their environment (Psychologist World, 2018).

The central points of sociocultural theory are closely tied to the child's social experience during learning. Vygotsky emphasized the following important aspects of the social learning process, (a) the existence of more knowledgeable others that serve as models, where the child gains experience by watching others, (b) the zone of proximal development where the child can improve their abilities through scaffolding and mediation, and (c) authentic activities that occur in real life experiences (Gredler & Shields, 2008). A debate regarding the zone of proximal development questioned whether the adult role in the process mediates the learning through direct assistance or dynamic assessment of the learning process (Marc, 2017). Both aspects play a role in academic support, supporting scaffolding and diagnostics to assist student learning. Providing a supportive environment that surrounds an individual prescribes how they think and what they will think about (McLeod, 2014).

Current college assessment practices reflect the desire to clarify how learning takes place and documents the utility for the student within the college curriculum (Havnes et al., 2016). The curriculum has determined what college students will experience and assesses the comprehensive nature of their thought process; thus, defining the zone of proximal development for students within a program (Marc, 2017). Although many view Vygotsky's work as a developmental theory that focuses on the development of cognitive skills during childhood, the constructivist nature lends itself to learning at the adult level where shared experiences promote intellectual growth (Slavich & Zimbardo, 2012). The college environment presents a new and leveled ground for young adults, presenting new vocabulary and challenges that some will be more prepared for than others (Shapiro, 2011). Students will become aware of new symbols and

logic and compare their experiences to their peers but may need the assistance of more, experienced students, or tutors to navigate the information (Slavich et al., 2012).

Student behavior goes beyond individual and group actions and is influenced by social learning through cultural experiences. While many students have come to college through a long family tradition that understands the demands of college, developmental students are often the first members of their family to go to college and struggle to meet these foreign expectations (Laskey et al., 2011). Pairing up tutors with developmental students can be challenging because their past experiences do not mesh, making it difficult to establish a trusting relationship (Di Tommaso, 2012). Helping developmental students to invest in their peers is a multilayered process that requires academic support staff to meet students at their current level and that tutors employ scaffolding strategies to ensure successful interaction, all within the aggressive timeframe of the semester.

Social learning theory and sociocultural theory contribute to how students learn and the critical influences that surround them. Both concepts are present within the college setting and help to guide how the curriculum can be structured to best support student learning. The emphasis on communication within these theories must consider how modern students interact physically, intellectually, and virtually through the advent of technology.

Technology. Technology is a cultural product, group adoption of a particular communication practice validates and modifies the concept or extinguishes the idea. Web-based technology and social media have evolved through several manifestations since the beginning of the 21st Century (Jelev, 2015). The validity of digital communication lies with the followers. Faculty adoption of a particular software or social media platform guides student use within the

course setting (Khan & Omrane, 2017). How technology is offered and used on campus will impact the overall culture (Bowen & Guthrie, 2013).

On-campus technology relates to tools that make tasks easier ranging from automated entry systems to intricate communication support systems; however, educational technology often embraces computer and digital methods for supporting classroom functionality. The creation of the World Wide Web caused a paradigm shift that spans social and intellectual frontiers. This phenomenon is so powerful that children born after 1980 have been dubbed digital natives (Prensky, 2012). Administrators at schools and colleges have been eager to adapt computer applications in their classrooms, spurred on by beliefs that web access caters to digital immigrant learners with high technology needs and preferences (Jelev, 2015). Technology marketers support these trends, but efficacy is lacking in many cases (Robsham, 2017).

Technology encompasses many aspects in a community college student's life. Most community colleges have adapted their technology for communication, research, and even course support (Anderson & Horn, 2012). However, many students lack internet access at home or finances to support technology devices and applications at school (Czerniewicz et al., 2013). Although modest in research findings, academic gains occurred for students in using the internet to access course materials or preparing for research assignments (Anderson et al., 2012).

Many colleges host external tutoring platforms with various levels of access and success (Hetzel, Laskey, & Hardt-Schultz, 2014). Community college students may lack proactive study skills that would involve planning for asynchronous responses, or static responses as opposed to immediate response support (Laskey et al., 2011). Although e-tutor consortiums are available, student's preference for interacting with live tutors in person rather than asynchronous feedback results in limited use of these platforms (Fosmire, Lomanto, & Sanders, 2015-2016).

Administrators on college campuses are well aware that the digital natives have arrived and that meeting their needs may require more access to technology. Growing up wired to the internet has linked these students to web-based resources that make knowledge accessible to everyone (Prensky, 2012). While it seems accurate that mobile technology is a preferred method of communication for traditional-aged college students, evidenced by the ever-present cell phone and tablet use on campus, not everyone is on the same level. Some students lack financial resources and the connectivity necessary for technical resources (Czerniewicz et al., 2013). Finding a balance between digital natives and digital strangers may mean varied deliveries are necessary.

Review of Research Literature and Methodological Literature

The conceptual framework from Bandura's social learning theory and Vygotsky's social cultural theory provide a theoretical basis to investigate social issues in providing academic support for college students. Incorporating the advances in technology and their inclusion in the college experience adds a new lens to the social aspects of learning (Prensky, 2012). The literature review in this study examines the interaction of social networking, including social media and virtual communities, with technology access and use among college student, and the offering of academic support services through tutoring.

Social networking. The concept of social networking predates the web and online social interactions. Humans are social beings that interact in a variety of ways across diverse relationships such as friend, professional, and religious groups (Christakis, 2012). Individuals may use social media sites such as Facebook, LinkedIn, or Instagram to connect with peers, with multiple accounts in place to fulfill diverse needs (Kasakov, Koshee, & Bobrov, 2018). As expansive as current social networking sites are, no one site can fulfill all communication needs.

Millennials have grown up in a world that continuously connects and spans a global audience. Staying connected to information makes it easier to manage tasks and find out what matters (Prensky, 2012). College students benefit from instant access but still struggle with time management and have difficulty focusing on specific information when so much is available (Paul et al., 2012). Since many students are adept in using social networking, it can make communication easier within an educational setting that values social interaction (Guy, 2012). However, not everyone is on equal footing regarding access and interest to participate (Czerniewicz et al., 2013). Instructors expect students to network in their academic setting in preparation for employment in a digital environment that favors those with excellent networking skills (Guy, 2012).

Although the impact is unclear, it appears that higher use of social networking is associated with deficits in attention and time management, thus reducing student-learning outcomes, and furthermore, the students do not want to use social networking for academic purposes (Junco, 2012; Paul et al., 2012). However, a Malaysian study in 2015 found that despite more frequent use social network users with higher social acceptance scores performed well academically, suggesting that personal characteristics are more influential than social networking preferences (Ainin et al., 2015). Overall, it appears that social networking is an innovative medium, harnessing the platform for academic support purposes will involve strategic implementation.

Social media. Although social media (online networking site to share and create information) is a popular personal communication tool that is used by millions, adapting the platform for academic use outside the class is a relatively new idea. Students use many social media sites in selecting their college sites, and colleges invest in making their sites attractive to

potential students (Mastrodicasa & Metellus, 2013). Beyond marketing, there has been debate regarding the use of social media within academic support services.

While some research supports the full adaptation of social media as an education support tool, others fear that student skills such as grammar, spelling and social nuances are eroding due to frequent casual use of these sites (Ainin et al., 2015; DuBose, 2012). In a 2012 study across the United States, most students and faculty reported using social media for social engagement, followed by direct communications, feedback, and relationship building, with only a small percentage referencing academic purposes (Guy, 2012). Intentionality also played a role in whether users fared well socially, those that participated socially were better adjusted than solitary users who randomly surfed posts or played games (Mastrodicasa et al., 2013).

Margareyan, Littlejohn, and Vojt (2011) warned that millennials were fickle in their allegiance to software or social media, which coincided with a decline of millions of high school and college students using Facebook as their preferred social media site (Matthews, 2015). Creating academic use of Facebook may not be feasible if the incoming students are not present on the site.

Many tutor platforms exist and are offered within the college setting but getting students to use these services is a challenge. Students who use computer-assisted tutors show moderate improvement in their skills, however, at the community college level, students who seek out academic help prefer face to face tutoring (Kulik & Fletcher, 2016; Russ, 2015). Delivering face-to-face tutoring is costly and underutilized (Jaafar, Toce, & Polnariev, 2016). Adapting tutoring support coupled with online access and maintaining the human component in weekly group sessions, is a potential solution; if students buy into the system.

Technology solutions abound, and consumers can be overwhelmed as to which products are worth the money in the end. Administrators need to be accountable to their boards and taxpayers and choose devices that are cost efficient; curriculum should drive technology choices. Many software applications are developed for a specific time and need, and therefore wind up discarded or replaced in weeks or months, wasting limited finances (Gerlich, Drumheller, Babb, & De'Armond, 2015). Furthermore, computers and software often require updating and replacement as soon as budgets allow. The disposable nature of technology is just one problem; another is getting the students to use technology to support academic work (Jelev, 2015).

Taking that concept to the next level of abstraction, academic support, results in a loss of instructor influence if professors only use the learning management system site for social information and updates. While some sites offer interactive capabilities that include instructor feedback, many instructors are uninterested or overburdened and cannot commit to supporting these platforms (DuBose, 2012). With the absence of the instructor, students must take on leadership roles in the virtual community to sustain interaction, which requires a sense of self-efficacy for using the site, sharing useful information and a belief that others will participate (Kim, Lee, & Elias, 2015).

Virtual community building. While many take for granted the availability of free online interactions and the presence of virtual communities, these conveniences are made possible by a complex set of hardware, software, and business agreements (Ackland & Swinney, 2015). The business aspect of any given social media site curtails its functionality to meet the needs of customers, limiting applications to what makes money for the company (Kasakov et al., 2018). Regardless of the business-ramifications of building virtual learning communities the utility of these sites focuses on the users shared interests and meaningful communication. The main

characteristics of virtual communities are interactive, dynamic, and purposeful communication, which support the functionality of learning communities (Marin, 2014).

Virtual communities exist both informally among interested individuals, and formally through learning management systems connected to educational institutions (Chunngam, Chanchalor, & Murphy, 2014) Virtual and blended online opportunities support a philosophy of learning as a social construct, and promote learning as participatory rather than an isolated acquisition of knowledge (Ackland & Swinney, 2015). Collaboration and mutual goal setting are fundamental to virtual communities, informal groups may set their environmental standards, but students may need the training to support these competencies in formal virtual learning communities to build effective interactions (Hernández, González, & Muñoz, 2014).

Content experts are necessary for both formal and informal virtual communities; however, competencies and objectives help to construct a methodology that will align teaching and assessment considerations are needed in formal settings (Hernández et al., 2014).

Participants vary in their reasons for joining a virtual community, but informal groups usually have personal incentives that draw them to the group, such as improving a skill or knowledge. In formal virtual communities, instructors assign students to learning groups, representing very different motivations, participation, and expectations between the groups (Chunngam et al., 2014).

Participation is voluntary but signing on to a service could mean agreeing to the mining of personal information and interests on behalf of the business interests of the corporation (Kasakov et al., 2018). Virtual learning can control the direct interface of communication. However, individual participants are dealing with an invasion of their privacy and a profusion of

environmental distractors, ranging from connectivity to who sees their posts or shares their space (Ackland & Swinney, 2015).

Scripted directions and structured groups can provide guidance, help students successfully participate in the virtual community, and help clarify expectations (Hernández et al., 2014). Learning that occurs in a virtual community is collaborative, embracing the knowledge from the group rather than relying on isolated pockets of information (Marin, 2014). Learning can be casual but purposeful pedagogy requires planned settings. Virtual communities become more active with planned activities, group agreements, equitable work distribution plans, intervention strategies for non-compliant members, and forecasting log-on frequency expectations (Hernández et al., 2014).

Group collaboration must facilitate complex tasks and assign groups to specific problem sets with the support of a guide or tutor, who guarantees collaboration and fulfillment of the tasks (Hernández et al., 2014). A combination of asynchronous and synchronous opportunities provides participants with opportunities to interact within the group setting. Chunngam et al., (2014) found more asynchronous use in the informal virtual community databases, noting that even though they do not contribute to the conversation, passive participants may benefit from content within the setting.

Marin (2014) reported that students recognize the importance of virtual communities in discussing class content and appreciate the availability, accessibility, and flexibility that take place in an online environment. Traditional instructor and student roles must evolve to take on facilitation, participation, and evaluation within the virtual community (Hernández et al., 2014). Until a more centralized and less fragmented social networking platform exists, users will have to manage multiple servers to fulfill their social networking needs.

Student use of technology. Growing up surrounded by technology, offers new ways to problem solve. Today's students can stream media at their convenience and resist inflexible network schedules or limited library availability (Prensky, 2012). While schools have invested heavily in computers and software, students find mobile devices preferable to expensive and clunky personal computers (Margaryan et al., 2011). Rather than embrace student preferences for more affordable mobile technology, many schools have banned the use of cell phones and tablets in class (Yang, 2013). Mobile and cell phone technology is easy to take with you and can be much cheaper, allowing lower socioeconomic student's equitable access away from school (Gerlich et al., 2015). Equitable access is vital because technology can support academics and move students toward college completion and improved life outcomes.

With so many choices, students could vary widely in the ways they use technology. However, interest and usability are influential factors in technology adoption (Khan et al., 2017). Students tend to stick to the basics of text, email, word processing, and PowerPoint for classroom use unless an instructor requires a specific platform for the class (Margaryan et al., 2011). Many instructors are digital immigrants who do not see the value of technological approaches to teaching and prefer lecture driven delivery, which may pose a problem for current students (Prensky, 2012). Tutors are peers with the same technology background as students and share a reliance on computers and cell phones in their academic work and communication. In essence, the students and tutors are at ease using technology to solve communication problems and support their academic pursuits. Therefore, knowing what types of technology is preferred and used by students could facilitate academic support.

Mobile technology. Many households have converted to cell phones in place of landlines, ushering in an entirely new way to use phones, other than just talking (Dekhan, Xu, &

Tsio, 2013). Students still tend to use basic functionality for email, messages, and games rather than specific applets for education (Margaryan, Littlejohn, & Vojt, 2011). Mobile technology devices are the preferred tool for digital natives; they are portable and affordable as compared to personal computers or even laptops (Gerlich et al., 2015). However, smartphones do not have equal access to computers. Students may find they cannot easily access some information even within learning management platforms and must rely on computers on campus, or on other public sites (Czerniewicz et al., 2013). Student frustration with technology often stems from the inability to access needed resources (Dekhan et al., 2013).

Equitable web access. A division remains between those who have access and are at ease with technology and those who cannot access technology or afford computers or mobile devices (Czerniewicz et al., 2013). Digital natives who can afford devices and software are fickle in their technology use and often discard apps within a month of acquisition (Gerlich et al., 2015). However, some students lack internet access because of living rural locations, and others just cannot afford to buy a computer or smartphone (Maghnati & Ling, 2013). College staff and internet software designers have sought to improve internet access by providing Federal Pell grant recipients with free web access (Business Wire, 2015). A vast array of services, platforms, software, and devices exist; however, colleges cannot afford to offer unlimited choices, and in reality, students are specific in what technology they use (Khan et al., 2017).

Digital inequality. The digital divide is more problematic for some students. Females and minority students often experience more technology problems (Prensky, 2012). While most college students use cell phones, there may be limits on how they use their devices. The relationship between how and why students use their cell phones is a complicated process, dependent on life demands, including academics (Czerniewicz et al., 2013). Colleges must be

aware of technology limitations for their students in relation to serving low income and diverse populations (Crocker, 2014). No student should be placed at a disadvantage because of college technology issues. Gender and minority considerations should be built into academic support technology offerings.

Technology to support academic success. Peer tutors have traditionally experienced the software programs in the classes they are tutoring for and are aware of the technology needs related to a course, making them ideal role models, and mediators of cultural practices. Most students are aware of how to locate resources and submit assignments in the learning management systems such as Blackboard, within their institutions (Bowen & Guthrie, 2013). Academic support staff and tutors may become aware of barriers to access on tablets and smartphones in assisting students who ask for help; however, problems not brought to their attention will remain unsolved (Khan et al., 2017). Along with knowing how to navigate the LMS, tutors need to understand the underlying technology needs built into a course.

Academic support staff needs to be aware of technology use in courses that employ group tutoring as academic support. Content tutoring requires continuous communication and updates between instructors, support staff, tutors, and students. Tutors may need to train students in technology use or suggest helpful apps. Student need is at the center of tutoring; therefore, tutors must identify technology barriers and plan to deliver support and resources via multiple channels, including technology and onsite resources (Margaryan et al., 2011).

Social and cultural aspects of community college. Community colleges play an essential role in educating students in the United States (Crawford & Jervis, 2011). Cost savings and ties to local interests have helped promote the enrollment in two-year programs as a successful entity in their role of opening access to education (Tinto, 2012). Economic factors

profoundly influence education. Community college programs blossomed under the civil unrest of the 1960s and responded to the cyclical needs of economic forces by serving more students in recessions and fewer in times of prosperity (Fuscaldo, 2016). As the economy improves, colleges experience lower enrollment because other employment options may not require a degree (Long, 2016). Enrollment decreases make student retention a priority.

Since employment opportunities are increasing, colleges are again facing declining enrollment but still need tuition dollars to maintain their facilities, staff, and programs (Harclerod & Eaton, 2011). The turning point for decreasing college enrollment began in 2008 due to lower birth rates and tighter budgets, but the trend continues in the 21st century (Juday, 2014). In response, most colleges now focus on retaining their current students, rather than recruiting replacements to maintain their tuition income. Colleges need to address attrition and academic-under-preparedness through student support initiatives (Laskey et al., 2011). Academic support initiatives are crucial for community colleges, with open access criteria that attract underprepared students and students in need of developmental education support (Pruett & Absher, 2015). Developmental educators now find themselves central to understanding learning needs and supporting student-learning outcomes across a wide body of student variables and performance levels.

Community college student characteristics. Diversity in demographics has multiple effects on the community college campus. Student tuition dollars support around thirty percent of the college budget, with the remainder coming from tax sources and grants. Nearly half of the students are white, with Hispanic and Black American representing almost thirty percent of students on community college campuses (American Association of Community Colleges, 2016). Women continue to outnumber men on the community college campus (Juday, 2014).

Most community college students work outside of school and rely on some form of financial aid (American Association of Community Colleges, 2016). Program directors are interested in who attends community college, but knowing why students are attending college, can be even more important and help to enhance program delivery.

A schism exists in the reasons people are choosing community college programs. Many local students may seek out affordable opportunities, which support diverse vocational goals and provide more personalized assistance for their learning needs (Tinto, 2012). Some of these students may focus on improving their skills at the open access level to gain entry to a more competitive program (Di Tommaso, 2012). However, a growing number of the students who enroll in community colleges as long- or short-term attendees are interested in transferring to a baccalaureate program (Tinto, 2012). Around 40% of those entering as freshmen are the first in their family to attend college (American Association of Community Colleges, 2016). These students often come from low socioeconomic backgrounds, lack academic skill sets, and rely more heavily on support offices at the college (Williams, 2017). The wide range of student abilities and interests provides a challenge in program structures to support academic success. Learning to work together and learning from one another is central to the college experience. Developmental students' peer relationships are often associated with past academic failures and can cause distrust, and reluctance to foster new ties with classmates (Di Tommaso, 2012).

Student influences. Students will grow and change over time; however, academic demands push this development into a rapid pace that will not allow for gradual acquisition of skills and concepts, especially for developmental students that constitute a majority of community college campus enrollment (Jaafar et al., 2016). Regardless of their initial academic readiness, students must rapidly acclimate into the educational timeline, obeying demands for

completing projects, understanding limits on financial aid, and dealing with pressures to become self-supporting (Matthews, 2017). While using academic support and tutoring could help, most students do not take advantage of these resources (Fain, 2012). Meanwhile, community college administrators struggle with external mandates to keep students on track for timely graduation, avoiding an overburden on student and taxpayer resources (Wyner, 2012). The complex nature of student success at the community college level requires multiple approaches to balance the challenges in learning and behavior.

At the community college level, students continue to struggle with comprehending complex reading material with new and challenging vocabulary (Holschuh et al., 2013). Peers can be supportive and aid in understanding new ideas, however, students in poverty-based areas have learned not to rely on their peers in secondary educational settings and transfer this experience to the college setting (Di Tommaso, 2012). Convincing students to invest in each other relies on overcoming these negative personal encounters and providing peer tutor role models to deliver a welcome form of academic support.

Student challenges. Transitioning to being an adult college student requires self-management skills that are only beginning to emerge in adolescent development (Cook et al., 2009). Community colleges, in particular, need to help students define their roles as well as those of the college and their family (Karp et al., 2012). Knowing where to go and whom to ask for help is essential to navigate college expectations successfully. Unanswered questions force consideration of previous tactics, which helped to avoid unpleasant circumstances, such as dropping out or failing to complete necessary tasks. Academic support programs exist to assist students with facing these new challenges at the college level. The professionals who work in

academic support continually assess their program offerings to identify promising practices, which meet the needs of the students on their campus (Norton & Agee, 2014)

Reliance on the safety net of pre-college life should reduce as students build their social and self-management skills. Individual needs outweigh the community aspect of the two-year college (Tinto, 2012). If students lack the social skills to connect with new peers, they are more likely to stop attending, although there are those that focus solely on the social aspects of clubs or groups and fail to go to class or meet academic standards (Laskey et al., 2011). Students need to balance college life with time management and study skills to succeed in college.

Once acclimated to a community college setting, students will find themselves in classes with others who have very different personal aspirations (Di Tommaso, 2012). The transfer-bound student may find that vocationally oriented students place different values on learning in the classroom, and those with very short-term commitments may see little reason to invest in their classmates (Karp et al., 2012). The schism between these groups results in different social aspects, which reduce social learning opportunities.

Retention issues. Community college program personnel pride themselves on their outreach and support programs, but students still tend to avoid these services (Ciscell, Foley, Luther, Howe, & Gjesdal, 2016). Developmental students report that they think using academic services would be helpful, but they cannot find time to connect with tutors, mentors, or counselors; because they want to leave when they are not scheduled to be in class (Di Tommaso, 2012). Poor time management and failing to plan for assistance is indicative of the factors that plague developmental students and lead to them dropping out of college (Laskey et al., 2011). Adjusting prior behaviors can be challenging but worthwhile.

The differences in intention to succeed between students in community college and those in competitive entry institutions influence retention and student performance. Laskey et al., (2011) found that students in small private colleges were more likely to seek out tutoring and to earn higher grades. Reducing attrition at the community college level involves a holistic approach to the academic and social climates on campus. Many times, developmental students are the first in their family to attend college: the college campus is a foreign land that requires them to develop new skills at a rapid pace (Office of Postsecondary Education, 2016). These families play a primary support role for their children but are often unaware of how to navigate this new frontier. Students naturally turn to their trusted supports, their family, but find little or no help with the challenges of attending college (Di Tommaso, 2012). First-year college students and their families may need support on campus to meet their academic goals (Windham et al., 2014). Helping college-bound students to connect with appropriate resources serves both the needs of the family and the student.

Academic support. Small community colleges are struggling with lower enrollment and poor retention (Juszkiewicz, 2016). The relationship between underprepared students and abysmal retention rates heightened the need for academic support, to avoid losing students and maintain tuition income (Holschuh et al., 2013). The need for academic support became a binocular lens, focused simultaneously on reducing budgets, due to lower revenues, while magnifying the need for academic support, and retention through improved student-learning outcomes.

A lack of identity for academic support services becomes apparent when faculty and students' services personnel try to resolve issues without academic support input. On many campuses, very few people hold degrees in their subject matter rather than in education, except

academic support staff (Learn.Org, 2017). Therefore, many intelligent people who know very little about the science of education, make decisions about academic support; bypassing those who do understand what it means to teach beyond presentation and create real remediation.

Community colleges must deal with practical realities and external mandates to increase success rates for underprepared students (Spaid & Parsons, 2014). As colleges revamp their remediation efforts, the services of academic support become more central in the education process. Academic support staff has limited resources that require careful allocation to support their efforts. Tutoring programs can deliver student support through cost-effective methods using group-tutoring platforms (Holschuh et al., 2013). Encouraging students to participate in tutoring relies on quality services and effective communication, therefore developing supportive online resources and communication will provide an objective method to track interactions and focus on those that increase student engagement. Tutors themselves hold excellent leadership potential that can be useful on campus and honed for professional roles after they enter the workforce.

Promising practices. SI has proven to raise scores of students who voluntarily attend sessions; however, students who attend voluntarily may be different in their motivation, aspirations, or dedication from those students who choose not to attend (Jones, 2013). Creating programs that draw more student participants is always perplexing. Arranging for support sessions to occur in natural spaces between class offerings is challenging, but could eliminate hesitancy to attend tutoring or address time-conflict issues for some students (Di Tommaso, 2012). Offering support in natural communal areas, such as labs, may also help students to feel more comfortable in participating in what is going on with other students. Finally adding a layer

of social media within classes can create a communication opportunity, which leads to more chances to connect with classmates.

Tutoring. Within the tutoring community, many models exist, such as peer assisted learning, remedial approaches, social support approaches: College program staff adapt those models to fit their own needs (Arendale, 2014). Community colleges struggle to retain their student populations and deal with assisting those who are underprepared for college-level work (Juday, 2014). The short duration of a two-year program also makes finding, training, and retaining tutors more difficult. Setting students up for success in their first year is critical to retention (Arco-Tirado, Fernandes-Martin, & Fernandes-Balboa, 2011). First-year success is vital because many times, finding a tutor for second year classes is not possible at the community college.

Tutor programs establish offerings based on their student population needs. Some colleges have grants to help support identified populations. Federal TRIO Programs (TRIO) are a combination, of initially three, and now eight separate government programs, which help to fund education and community agencies that support students from impoverished backgrounds, first-generation college students, and students with disabilities (U.S. Department of Education, 2017). The Higher Education Opportunity Program (HEOP) supports New York State residents who are low income to access higher education (Office of Postsecondary Access, Success, and Support, 2016). However, the mainstream population is more reliant on academic support offerings available to all students. Although all students contribute to the existence of academic support through their tuition, only about thirty percent will take advantage of tutoring (National Tutor Association, n.d.). Retention and graduation rates also linger in the thirty percent range for

many community campuses (Laskey et al., 2011). These low rates of completion leave much room for improvement.

Tutoring use and efficacy. Examining the relationships between student use of tutoring and technology on community college campuses may expose new ways to connect academic support to student engagement. Theoretical approaches to education and technology can provide a basis for beginning research (Prensky, 2012). Community colleges can consider a greater focus on group tutoring methods such as SI-based initiatives. Directing the research at the community college level helps to expose the experiences of students within public post-secondary colleges and the professionals in the tutoring community that serves that population. This work does not address tutoring delivery in private colleges, but aspects of this research offer new insights regarding group tutoring and technology infusion.

Research can help tutoring program staff to consider efficacy from a cost and student learning outcomes perspective that can positively affect retention and completion. Investing in the right approach for a student population is important controlling costs. If students do not use the proffered services then the expense is not warranted. Continuous assessment can help staff decide what is and is not working at their institution. Technology vendors can also gain insight as to how student communication patterns can benefit from apps and mobile devices (Margaryan et al., 2011). Research that correlates tutoring services with improved student learning outcomes provides academia with accurate assessment guidance that can elevate the status of academic support on campus.

Tutoring and social learning. Tutoring programs hire and train students who excel in both academics and social skills (National Tutor Association, n.d.). The challenge is bringing students who are fearful of making peer connections due to previous poor academic outcomes, to

trust that peers can be helpful and advantageous to their current academic experience (Di Tommaso, 2012). Working with a tutor does not ensure better outcomes but may result in valuable gains in social interaction (Dalton, 2011). SI is a program that includes social strategies, such as having an experienced peer situated in the class to act as a guide for the class (Jones, 2013). This arrangement identifies an appropriate peer role model and uses a structured setting to assist with class work. Students lacking appropriate models or peer connections would benefit from having this prearranged opportunity, rather than having to seek out this relationship on their own.

Once students perceive tutoring as effective in enhancing their grades, they will be more comfortable using tutoring and seek out academic support more frequently, tending to increase student performance (Boney, 2015). Regular use of tutoring on a weekly basis, accumulating five or more hours of tutoring, results in higher grades on tests (Garfolo & L'Hullier, 2015). Students need time to establish successful habits within and following the tutoring sessions.

Structured group-tutoring programs. Both students and staff benefit from structured programs (Altman Smith, Baldwin, & Schmidt, 2015). Casual arrangements may benefit peer interactions, but colleges need to provide academic support for the growing numbers of struggling students to retain them until graduation and maintain tuition revenues (Laskey et al., 2011). The curricular inclusion of tutoring programs embeds academic support within college learning and conveys an expectation that students will seek out academic support when needed.

Group tutoring benefits. Offering tutoring for groups allows students to safely explore new ideas and reflect on their meaning through peer discussions (Qureshi et al., 2012). Creating safe learning communities helps at-risk students to seek out help and do better in college (Tinto, 2012). At-risk, students often benefit from support in scaffolding their understanding of new

schemas (Russ, 2015). The social nature of group tutoring infuses the supports needed to build academic skills and boost student confidence. However, not all students are at ease with group tutoring formats (Hetzel et al., 2014).

Formalized SI programs, based on best practices, utilize group tutoring to provide structured support within the classroom by providing a tutor who attends class sessions and then delivers group tutoring each week. These SI programs reported greater efficacy due to enhanced participation, social learning, and student performance on tests (Garfolo & L'Hullier, 2015). Students can attend with friends or make social connections to support their learning.

Group tutoring is more cost-efficient. Lower enrollment results in many colleges cutting needed services, such as tutoring. One option is to replace underused drop-in tutoring, which schedules tutoring around convenience, with group tutoring, that occurs fixed times each week. Some question the investment in group- tutoring, which involves complex structuring, training, and promoting efforts (Boney Jr., 2015). However, the opportunity for improving student use may result in higher retention of students, and substantiate the costs involved with better student learning outcomes. Group tutoring encourages more student use due to decreased stigma, and social learning support, making the expenses worth the increased participation and resulting retention (Russ, 2015). The interaction of the group also affects how the instructor interacts with the class.

Tutoring supports allows instructors to focus on delivering course materials rather than individual students' needs during class sessions, allowing instructors to deliver content and tutors to provide a review. Group tutors help students to examine concepts, share knowledge, evaluate ideas, and form new schemes on course concepts (Arco-Tirado et al., 2011). Students experience motivation through effective tutoring, which helps to increase the use of tutors, help students

succeed, and supports tuition revenues (Tinto, 2012). Structured group study sessions help to develop cognitive and metacognitive strategies to assist with studying and planning, as well as provide critical reflection during group discussions to enhance critical thinking (Arco-Tirado et al., 2011). With these goals in mind, tutor programs can employ proven models to provide academic support.

Social-learning in group tutoring. Group tutoring applies a social learning approach to academic support. Colvin (2005) found that some students and tutors experienced confusion regarding the roles and structure of the tutorial process, which is normal in a complex social relationship. Structured tutoring programs help to define roles and clarify expectations, which enhance social skills (Arco-Tirado et al., 2011). This structure can help students benefit from the social aspects within the group tutoring setting.

Isolated learning limits students to only their ideas and problem-solving abilities. Social discourse helps students to consider opinions other than their own in a non-threatening environment (Russ, 2015). Some studies found that students use tutoring for difficult classes, which could confound grade increases, and that the repeated use of tutoring is linked to positive experiences within the tutorial, that may result in improved scores (Cisell et al., 2016; Pruett et al., 2015; Russ, 2015). Use of group tutorials focuses on providing support for challenging classes. Although students who attend group tutorials will experience less individualized support, they benefit from the shared concerns and critical reflection within the group (Russ, 2015).

Social environments provide discourse, which offers multiple approaches to problem solving. Even though one-to-one tutoring can provide more individualized analysis of student learning problems, there are benefits to group tutoring (Hetzl et al., 2014) Student's social

learning experiences enhance cognitive and metacognitive processes, which assist learning in diverse and challenging courses; and as a bonus these experiences may generalize to civility and increased social harmony (Qureshi et al., 2012). Critical thinking allows for more prosocial interactions, further supporting group approaches.

Social and cognitive enhancement provides improved student performance. Students, who participated in group tutoring, used studying and planning, which improved their performance on cognitive and metacognitive tasks (Arco-Tirado et al., 2011). These experiences have shown promising outcomes with final grades of students who attended group peer tutoring significantly higher than the final grades of students who attended either peer or professional tutoring in one-on-one sessions (Russ, 2015). Students are benefiting from the critical reflection within social settings and forming schemas to support their academic learning.

Students who lack academic connection can become isolated and at-risk in educational settings (Park, Holloway, Arendtsz, Bempechat, & Li, 2012). When students use technology to connect with others and create positive social experiences, they increase their sense of well-being (Mastrodicasa et al., 2013). Structuring social media interaction around social connections within an educational setting helps to increase a sense of belonging. Adolescents exist in the middle of their identity crises, wanting to be separate from authority figures yet needing to connect with peers (Mastrodicasa et al., 2013). Academic social media platforms can provide needed structure, but also foster independent communication among peers or cohorts.

Belonging as a social construct. Young adults shift their focus from parental recognition to an extra-familial social aspect of belonging to a group. Rather than merely demanding attention, the young adult earns recognition through their accomplishments within a setting (Williams, 2017). Digitally, badges, or status indicators, have served as recognition

within specific settings. Still, the reward lies in earning the badge rather than simply possessing the icon, even in the virtual world (Borsah, 2013). Within social media, having your posts *liked* or commented on becomes the equivalent of social recognition.

Social learning opportunities are equally as important as academic learning (Mezirow, 1990). Slightly more than half of the students at community college aspire to earn a bachelor's degree or higher, but most worry about academic success (Tinto, 2012). However, most community college students reduce their chances of academic success by isolating themselves from peers, and academic support offerings (Di Tommaso, 2012). One way to encourage the use of academic support is to connect successful students to students who need help. Overcoming this stigma can be difficult due to ingrained beliefs that isolation is better than collaboration among developmental students.

Creating connections on campus with model peers may help to facilitate the transition of needy students seeking assistance from family members to relying on college peers for help with academic concerns. When the link between college involvement and success at the university level is missing at the community college level, this fails to prepare students for participation in academic life (Karp et al., 2012). This transition is central to students becoming involved with others on campus and learning to seek out and locate helpful resources. Without scaffolding, this new path for problem-solving, students will not be able to transition from the community college to the next level (Di Tommaso, 2012).

Facilitating improved social connections on campus, perhaps using the communication via email and cell phones can help to create stronger ties to campus. Many community college students focus primarily on their academic work and are not interested in being involved socially on campus, but they are interested in technology (Anderson et al., 2012). Community college

students of all ages continuously check their mobile devices, cell phones, tablets, or the computers in the library, to stay connected to essential aspects of their life (Anderson et al., 2012). Using technology to stay connected is vital to students and serves to provide instant access to people or information.

Colvin (2005) worried about students spending too much time navigating the social structure of a study group and missing learning, but SI incorporates social integration strategies that support group dynamics as well as academic support (Dalton, 2011). Students are often reluctant to ask for help or draw negative attention to their learning problems. Academic support staff who focus on difficult classes, rather than student deficiency, use SI help to reduce the remedial stigma found in asking for help via a tutor (Jones, 2013). Students find solace in knowing that the class is challenging for everyone, instead of thinking their skills are subpar (Dalton, 2011). Demanding classes challenge all learners, therefore academic supports become normalized for the group, and student participation increases, resulting in supported social learning (Tinto, 2012). Group study helps to facilitate critical reflection through social learning both in-person and via course management platforms.

Learning communities. As students share ideas in social settings, individual students decide which concepts to focus on, helping create a more personalized learning experience, creating learning communities; even within the group. The tutoring session provides meaningful feedback as a group-construct rather than pointing out individual mistakes (Pruett et al., 2015). Group settings allow the student to participate with less fear of being wrong and makes for a more comfortable studying environment. Scaffolding instruction by providing layers of support throughout the learning process, in a group tutoring session, allows students who lack effective critical thinking skills to have positive experiences in critical reflection (Mezirow, 1990). Even

those students who lack practice in social discourse owing to remedial and at-risk situations become more willing to participate in group-tutoring settings (Russ, 2015). Fostering cognitive growth and enhancing students' performance are critical factors in academic support, especially for at-risk students, and tutoring programs can structure in the positive aspects of social learning within their programs.

Virtual learning communities bring technology and social learning practices together in a way that supports the digital preferences of millennial students. Time-pressed students fail to find time to meet with friends but can use technology to take advantage of a spare moment to text someone or check into social media apps. Asynchronous communication allows people to connect at their convenience rather than expend time and energy regarding meeting up. Face-to-face communication demands acute attention to details and the ability to respond spontaneously to verbal stimuli. Communication on social networking sites allows the parties to think and organize their contributions to the conversation before delivering a response. Although social gaffes have occurred through a lack of online etiquette, the web is responsive in creating guidelines for how to communicate online (Coe, Kenski, & Rains, 2014).

Research on virtual communities in education. Digital communication has made virtual learning communities available to anyone with an internet connection. Revolutionizing traditional communication from the postal service to the instant forms of communications enjoyed today has made the web a popular tool for all forms of communication, using that format for education became a reality in 1995 with CompuServe Information systems (Lake, 2009). Virtual communities allow broad access, transcending physical constraints of time and location, making it easier to communicate informally to build and share knowledge (Chunngam et al.,

2014). The VLC has no uniform definition but generally refers to the application of the virtual community in the field of education, which belongs to a learning community (Shen, 2015).

How virtual learning communities are used. Virtual communities allow individuals to connect on the web with others who are interested in a topic of mutual interest, informally or formally, to discuss thoughts, and share resources in both synchronous and asynchronous fashion (Chunngam et al., 2014). Informal virtual communities often rely on the presence of an informed audience and expert knowledge provided for a specific topic (Shen, 2015). Formal virtual learning communities, sponsored through educational institutions and business sites, may transfer knowledge and professional development through learning management systems such as Blackboard, rather than rely on commercialized social networking sites, such as Facebook (Ackland & Swinney, 2015; Chunngam et al., 2014).

Users may pursue common learning goals, but generally, the primary purpose is to increase the knowledge of participants via formal education or professional development opportunities (Marin, 2014). Advances in personal computing devices such as smartphones and tablets make access seamless, eliminating the barriers of time and space (Ackland & Swinney, 2015). Students can balance their busy academic lives with their social demands all within their devices, making rapid responses more likely within the community, which promotes belonging (Shen, 2015).

Contact frequency is a central component of virtual learning communities (Hernández, González, & Muñoz, 2014). The more people connect, the more likely knowledge will be shared, and people will learn (Shen, 2015). Students within this study typically access the VLC every two to three days and sometimes more frequently (Marin, 2014). The communities provided participation guidelines, content guidance, and proper citations parameters in scripts

that outline how to help and guide students in making meaningful contributions to the ongoing conversation. These guidelines are essential to interaction, especially when members are not actively engaged in the discussion (Hernández et al., 2014).

Planning for virtual communities. Students inexperienced with the platform format, and unaware of how to navigate the platform, in their device and environment, often require more technical support because they are new to virtual learning communities (Ackland & Swinney, 2015). Institutions that host virtual learning communities must plan for increased technical assistance and support. Inevitably, students must master the technology, but the learning aspects rely on structure and pedagogy to support learning (Chunngam et al., 2014). Along with technical mastery and pedagogy, students must develop active networks of personal relationships that support their learning needs, such as sharing resources, analyzing information, and critically reflecting on the discussions within the group (Marin, 2014). Planning and guidance are essential elements in melding these diverse skill sets.

Curriculum, policy, and pedagogy must combine to create a collaborative environment within the VLC. Detailed scripts can guide students through protocols, provide a framework for tasks, and assist with group cohesion, through both real-time interactions and asynchronous discussions (Chunngam et al., 2014). Virtual participation removes barriers to space and time but demands that the students commit to frequent interaction within the community, meaning their hardware must be compatible, appropriate space is available, and resources are available to help support learning and troubleshoot problems (Ackland & Swinney, 2015).

The presence of the instructor, or tutor, is virtually constant and is essential in stimulating student participation, supporting group cohesion, and assuring interactions tie to course outcomes (Ackland & Swinney, 2015). When students fail to participate as expected, the plan is

for the instructor to guide them through any issues they may be experiencing (Hernández et al., 2014). Ideally, students will perceive their VLC experience positively, so they will have more self-efficacy and participate more often (Shen, 2015). However, there is a delicate balance between empowerment and enablement in the VLC, the instructor and participants are continually virtually available which may inspire over-reliance on their guidance or an expectation that others will carry the conversation and require less input; therefore, the expectations for instructors must be clearly scripted (Ackland & Swinney, 2015).

Theoretical viewpoints regarding virtual learning communities. Virtual communities apply the concepts first offered by Vygotsky's sociocultural theory, situated and distributed cognition, and social constructivism (Hernández et al., 2014; Marin, 2014). Recognition of the benefits of digital access takes social interaction into cyberspace. Ackland and Swinney (2015) employed the actor-network theory in their study of virtual communities, incorporating non-human factors in social change, such as technology.

Indeed, students have become fused with their computers, relying on their functionality to participate in virtual communities, social networks, entertainment, and business capacities. Artificial intelligence blurs the lines between humans and technology, often making them inseparable (Ackland & Swinney, 2015). Integrating social and technological theories converges in the theoretical perspective of communities of practice; we join those groups that fit our social and intellectual interests and pursuits (Chunngam et al., 2014). Our motivations and goals help to drive us toward virtually connecting with other interested individuals who can help us fulfill our needs (Shen, 2015).

Knowledge sharing in virtual learning communities. Having access to shared information allows members of a group to configure meaning together (Marin, 2014). Those

members who are most interested in a domain may have more expertise in that topic than others might or develop more expertise through affiliation with other expert members (Chunngam et al., 2014). Higher levels of knowledge in virtual learning communities are based on critical reflection and collaborative learning (Hernández et al., 2014)

Chunngam et al. (2014) purported that “virtual communities represent a means for geographically and organizationally diverse individuals to share common interests” (p. 864). Diversity brings new experiences and viewpoints into the virtual community, expanding the knowledge base surrounding a topic. Participants can choose to absorb or reject diverse interpretations of a topic. From the actor-network theory, perspective learning is a meld of the social, technological, and human; “which promotes learning as participation over learning as acquisition and understand knowledge as socially negotiated by participants” (Ackland & Swinney, 2015, par. 6). Students arbitrate their learning within a social construct, which encompasses both human and technological diversity in the VLC.

The student holds considerable power in the VLC. They decide when and if they contribute to the discussion. Ultimately, the student decides how to interpret the contributions of the group and what information they will take away from the conversation. However, by awarding recognition, credits, or degree confirmation, the institution provides external reinforcement for compliance and decides how to evaluate the students’ participation within the VLC, (Chunngam et al., 2014). These rewards may compel the students to conform to the expectations of the institution regardless of their viewpoints.

Relationships, belonging, and trust in virtual learning communities. Students form relationships in virtual learning communities based on collectively interacting, learning, and sharing (Chunngam et al., 2014). Structuring a script for the group-building process helps foster

collaboration among members of the VLC: “heterogeneous grouping seems to lead to deeper learning as a consequence of the contrast of different points of view and diverse levels of comprehension” (Hernández et al., 2014, p. 3). Instructors must assess their students’ experience, knowledge, and motivation within the course aligning these variables in a way that promotes the flow of knowledge within the group (Chunngam et al., 2014). Consideration of the class members’ characteristics, such as experience level with virtual learning, class level, and major area of study are all-critical and should be incorporated into the group-building process, (Hernández et al., 2014).

Once the VLC protocols and relationships are established students can begin to focus on genuinely belonging to the group. Student users with a strong sense of belonging in the community are more likely to share knowledge (Shen, 2015). A community arises out of members collectively interacting, learning, and sharing (Chunngam et al., 2014).

Getting students to participate in the VLC can be challenging with new members, but those with experience can model proper participation, which is why it is so important to build groups with novice and experienced peers within a cohort (Hernández et al., 2014). Students typically check into their VLC a few times each week, checking on resources, working on assignments, and participating in discussions (Marin, 2014). Students who drop off in participation may require additional coaching to meet class requirements (Hernández et al., 2014). More participation results in more knowledge sharing and a greater sense of belonging to the group (Shen, 2015).

Building collaboration and trust centers on encouraging student/ teacher rapport and student/ student communication, cooperation between student work groups, practicing active learning, providing prompt feedback, committing to time on task, and maintaining high

expectations for all members (Marin, 2014). One way to build trust is by creating detailed scripts including specific student responsibilities. A preliminary task of the group is to draft a group agreement concerning how students will interact, the frequency of participation, quality of discussions and feedback, and timeliness of submissions (Hernández et al., 2014).

Students new to virtual learning will need a framework for understanding how to be a part of the community. Although the environment is virtual, both the student and the instructor's presence emanate from a physical location where students will be expected to “cultivate feelings of connection, to facilitate the so-called social presence” (Hernández et al., 2014, p. 6). For instructors that environment may be an office setting at work or home whereas students may be working from their home and lack privacy. Even though the community is virtual, the student may be experiencing the class from their private space, where friends and family cohabitate and become torn between class interaction and environmental distractions in their setting (Ackland & Swinney, 2015).

While the removal of physical barriers such as time and space increases access to virtual learning communities, distrust can occur due to those same spatial and temporal separations, maintaining trust is essential for knowledge sharing (Shen, 2015). Instructors can model the behaviors they expect to see in their students (Hernández et al., 2014). Transparency and clarity assure the students they are on a valid path.

Evaluation of student assignments and discussions should be objectively scripted and available to the students before submission. Building in predictability helps to create a sense of trust for the students. Helping the students to build emotional dependency, supports community development which is essential in growing mature learning communities that stimulate knowledge sharing and learning (Shen, 2015),

Academic issues in virtual learning communities. Academic performance combines a student's ability to attend to new information, apply academic rigor, plan properly, and critically evaluate new ideas (Paul et al., 2012). Curricular preparation for virtual learning communities must consider how the academic work within the platform will translate to the students' life; students invest ownership and commitment when their completed tasks have utility outside the class structure (Shen, 2015). The structure of the class must also incorporate intensive instruction on group building and collaboration, since not all students have experience managing group dynamics (Hernández et al., 2014). Engagement in the module network is mediated through the instructor's guidance and the framework of the course itself, especially protocols and scripted instructions (Ackland & Swinney, 2015). Structured settings provide important benefits in virtual learning communities; in Hernández González, and Muñoz (2014) students reported more satisfaction when their coursework when it was well planned and critically reviewed by both instructors and peers.

Empowering students to overcome unfamiliar technology, protocols, and concepts can help form a commitment to the VLC and result in a productive learning experience. The VLC puts students in a more active role that requires them to "take responsibility for collaborating in unstructured tasks with multiple possible responses" (Hernández et al., 2014, p. 6). Promoting active participation and collaboration with the VLC is excellent preparation for work-related skills students will experience after graduation (Marin, 2014).

Some researchers worry about the degeneration of academic and social skills in a virtual environment (Creighton et al., 2013; Kasakov et al., 2018; Paul et al., 2012). Marin, (2014) however saw students in virtual settings as more likely to have increased academic and social achievement. Increases in these skills may be related to the dominance of collaborative work in

virtual classes (Hernández et al., 2014). The virtual community is, for some, a compartmentalized place, limiting the generalization of skills acquired in the VLC (Ackland & Swinney, 2015). The access to abundant information within multiple platforms can overwhelm students who sometimes have trouble focusing on copious amounts of input and merging the concepts into a comprehensive whole (Paul et al., 2012).

Most students saw VLC interaction as important; however, revision, practice exercises, and virtual testing were not seen as beneficial to most participants (Marin, 2014). Students appreciated the merger of pedagogy, organization, and technology to support their learning environment and facilitate their virtual presence within the learning community experience (Hernández et al., 2014). Forming social bonds within the VLC helped to humanize the virtual environment (Ackland & Swinney, 2015). Reciprocally, users who perceived their experience as positive had more self-efficacy and participated more often (Shen, 2015). The structure found in the VLC proved more beneficial than unstructured social networks, where students felt competent in their ability to use social networking for academic purposes but did not have the desire or willingness to participate (Paul et al., 2012).

Faculty expressed both negative aspects and benefits related to participation in virtual learning communities. Instructors anticipated concerns regarding time management skills combined with attention deficit issues, which might have a negative impact on academic success (Creighton et al., 2013; Paul et al., 2012). Micro-power dynamics within the VLC, resulting in inconsistent participation, may unbalance contributions and confound the instruction (Shen, 2015). Benefits related to the instructor's ability to integrate diverse learning aids and resources within the virtual classroom, breaking down the barrier of time and distance, and the ability to interact from various settings (Ackland & Swinney, 2015; Shen, 2015).

Future directions for virtual learning communities. Virtual communities require leadership and expertise whether they exist on an informal or a formal basis with instructors assuming the roles of planner, technologist, and content expert (Chunngam et al., 2014; Hernández et al., 2014). Knowledge acquisition in the VLC is dependent on students taking an active role and being responsible for their learning through participating in reflective experiences, creating meaningful dialog and challenging each other's ideas (Marin, 2014). The curriculum must align teaching and assessment, define group roles, solidify the role of the instructor to guarantee collaboration, and revitalize the role that teachers and students play in the virtual classroom (Hernández et al., 2014).

Future research on virtual learning communities regarding supportive learning communities that encourage critical discourse, develop objective learning outcomes, build trust, and identify motivational triggers can help to inspire spontaneous participation and share knowledge between members (Shen, 2015). Since virtual learning communities are a relatively new form of pedagogy, strategies regarding the nature of learning in virtual spaces and the interdependent roles that instructors and students assume within the community to produce authentic engagement will be of interest (Ackland & Swinney, 2015). Higher education institutions can employ technology solutions using virtual learning communities, which are a worthwhile investment to support innovation and promote improvement in learning (Hernández et al., 2014).

Review of Methodological Issues

Methodology in research depicts how studies found in the literature review were structured and highlights the strengths and weaknesses of the approaches that were used. Examining these methods helps researchers to identify processes that were successful and to

avoid the problem areas encountered in past works. Ideally, the researcher will build on these works to minimize risk, uphold ethical standards, focus on the feasibility of the study, and justify the methods to be used for a new study.

Minimize risk. Digital access to social media, social networking, and virtual communities has grown considerably over the last twenty years. Academia has welcomed the benefits of virtual access, which removes physical and temporal barriers but must also recognize the consequences associated with delivering education through these platforms (Prensky, 2012). Paul et al., (2012) used a survey to identify risks associated with social networking as an academic environment; therefore, a true causal relationship cannot be established. Kasakov et al. (2018) identified the commercial interests of virtual communities and then discussed the inability of those platforms to protect privacy or allow true social networking to occur. Creighton et al. (2013) combined a survey and a focus group, finding that students do not differentiate between technology and social media, rely heavily on social media as a resource, and fail to recognize shortcomings that can occur without proper use.

Maintain ethical standards. Removing bias and remembering to uphold ethical standards allows for more utility and a broader application of research findings (Adams & Lawrence, 2014). Empirical studies such as Chunngam et al. (2014) made sure to clarify roles for participants and summarize weekly participation but lacked participant anonymity by including participant names connected to individual posts. Surveys and test measures require objective terminology to avoid leading the participants toward a response, but Garcia, Elbeltagi, Dungay, & Hardaker (2015) addressed the stigma of attention deficit and the connection to overuse of social networks by altering that term to *student characteristics* to avoid negative associations.

Virtual communities and social networking sites are public domains that allow access to participant information, depending on how much a student has controlled their site, vulnerable personal information may be available. Cross-referencing college records with public records can improve validation of data, but publicly available information should be filtered for the specific purposes of research (Garcia et al., 2015). Public access to personal information can invade privacy, reveal personal information, and expose users to unsolicited commercial messages, which are clear ethical violations (Kasakov et al., 2018). Research in virtual communities must protect confidentiality while collecting data (Adams & Lawrence, 2014).

Feasibility. Identifying problems and opportunities within virtual communities and social networks establish a need for further study on this topic. Kasakov et al. (2018) pointed out the limitations within virtual communication platforms and suggested more a centralized structure that would help to avoid fragmentation in social networks and eliminate privacy concerns that occur on commercial sites. Paul et al. (2012) conducted a survey, which focused on how academic performance occurs within a social network and identified concerns with students' ability to focus and manage their time within that setting. Chunngam et al. (2014) emphasized the importance of expert knowledge and infrastructure in attracting participants to informal virtual communities; however, formal virtual learning communities can also benefit from these guidelines. Hernández et al. (2014) emphasized the importance of scripting the expectations of the VLC and preparing students for collaborative group dynamics within the class setting. Ackland & Swinney (2015) employed the actor-network theory to explore the interaction of humans and technology to highlight the importance of design. In addition, how the use of materials in a VLC can create both barriers, and opportunities for learning.

Justify appropriateness of design. A review of the design and methodologies used in the research supporting virtual learning communities and social networking consisted of empirical causal-comparative studies, quasi-experimental studies based on questionnaires or surveys, qualitative case studies using anecdotal records, and exploratory-explanatory essays based on literature reviews. Guy (2012) and Mastrodicasa et al. (2013) provide comprehensive literature reviews on how students use social media and the subsequent effect of using that method for academic pursuit. While these reviews provide excellent background information, they are not methodological approaches.

Only one of the studies employed an empirical approach; Chunngam et al. (2014) compared community coordinators who used social networks with those who reached out to friends and family for participation in an informal virtual community on Thai herbs. People who were interested in the topic of herbs showed more participation than those who were connected through friends and family to the coordinator, implying that information sought is a more motivational trigger for participation than personal connectivity (Chunngam et al., 2014). Although empirical approaches are the only way to show causal comparative relationships, convening a participant group can be difficult and is limited to what transpired, failing to explain why the results occurred.

Researchers adopting quasi-experimental methods in virtual learning communities and social networking used questionnaires or surveys to explore participants' views. A majority of studies used a questionnaire, including DuBose (2012) and Sudha et al. (2016) who focused on faculty perspectives regarding virtual communities and social networking. Ainin et al. (2015), Kim et al. (2015), Paul et al. (2012), and Shen (2015) explored college students' motivation, participation, and academic performance in relationship to virtual communities and social

networks. Ackland and Swinney (2015), Hernández et al. (2014), and Marin, (2014) concentrated on curriculum, materials, and planning aspects within the virtual community. Surveys are efficient in gathering participant input; however, validity can suffer due to the subjective nature of the instrument and results still do not reveal why participants share these views (Adams & Lawrence, 2014).

Case studies transcend the barrier between what happened in a study and why participants chose to respond in that fashion. The case study allows for an in-depth exploration of phenomena that cannot be explained through quantitative approaches (Adams & Lawrence, 2014). Creighton et al. (2013) relied on an interactive approach that used a mixed-methods approach by combining a survey with a follow-up focus group to determine students' viewpoints on social media and academic success. Coe et al. (2014) and Garcia et al. (2015) employed data mining through social media and news websites to explore peer interactions and civility. Ackland and Swinney (2015) compiled a comprehensive collection of anecdotal data, including meeting notes, anonymous feedback submitted at a face-to-face workshop, and post-module evaluation forms. The work of Ackland and Swinney (2015) combines the interpersonal information and validating anecdotal records, which increases the validity of their approach, and inspired the selection of a similar methodology for studying virtual learning communities and how they support post-secondary students.

Synthesis of Research Findings

Increased external mandates require all college services to document their assessment and tie their work to student learning outcomes (Garfolo & L'Hullier, 2015). Past research has indicated there is a relationship between tutoring and student learning but has failed to reach agreement on how to prove this phenomenon exists (Arco-Tirado et al., 2011; De Backer et al.,

2015; Hock, Deshler, & Schumaker, 1999; Boney Jr., 2015). Research using group tutoring in virtual learning communities can help to expand the size of the groups studied and help to eliminate confounding variables. Examining the impact of virtual learning communities on post-secondary schools within a state system, focusing primarily on commuter students in rural and urban locations, will be the focus of this study.

The linear co-existence of successful methods, when blended expertly, can increase student performance, resulting in a singular, powerful method to promote student success (Jaafar et al., 2016). Such is the case with the benefits found in combine tutoring and technology in the VLC. Independently, each of these concepts assists students in organization and study behaviors, which lead effective preparation for tests and assignments. This study will look at the impact of both group tutoring and built-in VLC supports. The synergistic combination of other study concepts may enhance student-learning outcomes, but this study capitalizes on the social aspects of learning merged with the efficacy of virtual communities and mobile technology.

Finding the right balance of tutor methodology and VLC support relies on social learning and consumer preferences. Increasingly digital use within academia aligns with the demands of traditional-aged college students who have grown up as digital natives (Prensky, 2012). However, on community college campuses, the student body is a mixture of returning students and those who lack resources for digital communication, bringing digital strangers into the realm of those at ease with technology (Czerniewicz et al., 2013). Busy community college students also have other personal pursuits and jobs and need to make use of their free time between classes (Karp et al., 2012; Paul et al., 2012). Capturing the right moment in a welcoming learning community can make the difference between students seeking out

membership in the group rather than perceiving stigma regarding academic support (Bunker Hill Community College, 2011; Hernández et al., 2014).

Inductive reasoning combines multiple strands of evidence to develop central themes allowing movement from examining experiences to exposing shared truths. The most significant advantage of inductive reasoning is generating a range of possibility, to allow exploration of new ideas (Machi & McEvoy, 2012). One issue that has weakened tutor research in the past is the reliance on small deductive studies based on one college, or even on just one tutor in some cases (Bobko, 1984). The merging of tutoring and virtual learning communities is a new relationship that requires examination to provide quality services for students.

The variance that occurs in tutoring programs can be overwhelming from a research perspective. This research will hone in on the peer group tutoring approach to academic support. Community colleges have limited budgets and limited time to identify and train their tutors. Tutors are not usually eligible to tutor until their second semester, once they have established their academic record. Drop in centers that use one-to-one tutoring often limit their tutor availability to by appointment only, maintaining a small-scale dyad arrangement. However, more students are requiring remediation and individually supporting each student is costly and impractical (Lu, 2013). The social nature of typical aged students supports the normalization of the learning process interactively, which facilitates learning through a VLC setting (Russ, 2015).

Another fallacy assumes that traditional-aged students are all digital natives. While software developers have an interest in formulating the need for more technology, it is critical to examine what, when, where, and how students use technology before adopting it for educational use (Czerniewicz et al., 2013; Sudha & Kavitha, 2016). Allowing the group to self-identify their

technology preferences is more likely to create buy-in and perpetuate the use of the VLC (Hernández et al., 2014; Khan et al., 2017). Technology applications should enhance communication and share resources, along with providing low technology versions to those lacking web access.

Critique of Previous Research

Virtual learning communities are gaining popularity and the attention of scholars for viable consideration as an educational tool. Pedagogical approaches can benefit from the dissolution of physical and temporal barriers in the delivery of academic supports through virtual learning communities but must realize that a platform is merely a tool; technology alone cannot perpetuate learning (Hernández et al., 2014). Planning for successful virtual learning communities must include careful detail to teaching students the art of collaboration, provide a clear framework within the class setting, and providing transparent protocols that hold all parties responsible for their contributions and learning (Marin, 2014). Accountability and ethics within virtual communities can be established through comprehensive plans for student learning outcomes, agreements for how students will interact in the community and recognition that privacy is a right and must be respected for all communications within the platform (Ackland & Swinney, 2018; Hernández et al., 20142015; Kasakov et al.,).

Tutoring has been a central practice in post-secondary education for many years (Nwaokoro, 2010). Many educators, including academic support centers, have resisted assessment in the past and external mandates from credentialing bodies have pressed all college services to practice continuous improvement practices (Harclerod et al., 2011). Authentic assessment has been difficult in tutoring practices in the past due to the confounding variables that affect student performance such as family, social, and work stressors (Di Tommaso, 2012).

Credentialing bodies do exist for tutoring centers through the College Reading and Learning Association (CRLA), and the National Association for Developmental Education (NADE), but there is a cost for certification, additional duties for staff, and many of the measures within these systems are indirect, focusing on student satisfaction with services rather than student-learning outcomes (Norton & Agee, 2014). These tasks are burdensome for academic support centers with small staffs, who experience rapid turnover for tutors who may work just a few semesters.

Assessment has consisted of student satisfaction surveys and utilization reports, with few if any ties to direct student learning outcomes, until recently (Norton & Agee, 2014). Satisfaction surveys are often used to create the body of knowledge around tutoring and virtual learning communities (Creighton et al., 2013; Lee I., 2010; Paul et al., 2012; Marin, 2014). Many of these articles focus on small convenience samples and limit the generalisability of the findings. More problematic is the indirect nature of surveys which are often subjective, and tell nothing about causations (Adams & Lawrence, 2014). Tutoring efficacy needs to tie to student-learning outcomes not just reflect how pleased students were with services.

Technology products have the advantage of collecting user data and behavior but focus on customers preferences (Kasakov et al., 2018). Many of the research articles related to user information and preferences have been conducted through surveys, often web-based (Creighton et al., 2013; Dekhan et al., 2013; Gerlich et al., 2015; Maghnati et al., 2013; Paul et al., 2012; Yang, 2013). Construct validity of the surveys will remain a concern, and crafting questions to obtain valid results may prove difficult. In this study student preference and use of virtual communities will be important in understanding which platforms are best suited to augment communication in the tutoring setting.

Researchers need to understand the participants' feelings and preferences; therefore, surveys may help solicit personal feedback (Adams & Lawrence, 2014). However, what someone likes may not lead to efficient practices in an organization. Students are secure with their use of virtual communities and social network but may choose not to use these tools for academics (Paul et al., 2012). Student participation in this study views tutor use as participation both in person and within the VLC, as defined by attendance at tutoring session and posts in virtual community platforms.

Chapter 2 Summary

Faculty and staff at community colleges face unique challenges in supporting their students, particularly those with developmental learning needs and first-generation college students (Di Tommaso, 2012). One of the most significant challenges is to retain students toward completion; therefore, assessment practices are essential in establishing efficacy (Spaid & Parsons, 2014). The challenges faced by academic support personnel include multivariate factors such as academic skills, social skills, access to virtual learning communities, web resources, and generational attributes (Bowen et al., 2013). As encompassing as this task is, focusing on specific programs may help to identify effective strategies in academic support.

Transfer-bound community college students seek to fulfill requirements for their institution of choice. These students may not continue to graduation at the community college resulting in reduced tuition revenues for the two-year institution. Degree-bound students provide the highest amount of tuition but also pose a greater retention challenge (Laskey et al., 2011). Therefore, it is essential to community colleges administrators to consider which programs are more likely to produce successful outcomes and why.

Academics view tutoring as a historically accepted, and valid form of educational support; however, the efficacy of this practice is assumed rather than proven. Without true assessment, tutoring practices, programs often continue with past practices that fail to meet the increased need for academic support and the influx of underprepared students (Russ, 2015). Tutoring professionals have focused on student satisfaction rather than efficacy in assessment and research practices in the past (Lee, 2010; Wells, 2015). The lack of hard evidence has resulted in less reliance on tutoring practices, reduced programs, and budgets in academic support centers.

Vocational program creators use more structured curricula and, naturally, create learning communities because of shared labs and specific course sequences. Taking advantage of the natural grouping that occurs in vocational settings could help to establish successful academic support interventions (Di Tommaso, 2012). Shared spaces and experiences provide natural social bridges (Christakis, 2012).

Students' sense of commitment to college includes social aspects of college attendance. This commitment plays an important role in establishing a sense of loyalty to college tasks and belonging to the campus community (Mastrodicasa & Metellus, 2013). Evaluation of new information requires students to accommodate their existing schemas through critical reflection, which occurs in social learning situations (Mezirow, 1990). Developmental students often struggle with overcoming unsuccessful peer relationships that influence their willingness to seek out help from classmates (Tinto, 2012). Failure to develop social connections within the community college can lead to isolation and impede the transition to higher levels of learning (Di Tommaso, 2012). Sponsoring virtual learning communities can provide students with additional opportunities to make social connections online rather than in person

The interest in digital natives and their communication preferences presents challenges and opportunities in program offerings on the college campus. The current student base was born in a web-enhanced era; however, this does not mean equity exists for access to technology (Czerniewicz et al., 2013). Corporate investors are willing to provide free and low-cost technology options for those who lack connectivity or finances to purchase devices; but these companies may secretly benefit by mining personal data (Kasakov et al., 2018). Mobile devices such as tablets and cell phones are the most frequently used forms of technology for college students but often lack the full functionality of a computer (Maghnati et al., 2013). Students opt for more affordable cell phones over computers but may experience frustration with access to the Learning Management System (LMS) and software device limitations (Dekhan et al., 2013). Academic support programs that seek to use technology to enhance student and tutor communication need access to knowledge regarding incompatibility issues and choice regarding user-friendly options.

Chapter 3: Methodology

This chapter includes a description of the research methods, the purpose and design of the study, target population information and sampling method, instrumentation, data collection methods, data analysis procedures, limitations of the research design, validations of credibility and dependability, expected findings, and ethical considerations. The methodology section also discusses the purpose of the study, its significance in current academic support practices, and the practical limitations of the findings. Methods will align with social learning environments and sociocultural theories specifically related to technology and its associated benefits in supporting educational outcomes. This will provide academic support personnel with objective information regarding the use of virtual learning communities to support student learning.

Research Questions

Bandura's social learning theory and Vygotsky's sociocultural theory provided a lens to understand how experiences in college influences students' behavior and interaction. Coupling these theories with the advances in communication technology presents a new platform to investigate how virtual learning communities influence the students' learning and socialization.

Retention concerns point out the need to maintain current students and applicant pools for some college's dwindling enrollment (Juday, 2014; Marcus, 2017). Academic support is viewed as an appropriate tool for retention (Roddy, 2016). Delivery of academic support in a virtual learning community utilizes a comfortable communication modality for students who are digital natives (Prensky, 2012). This information provides support for the major research question in this study.

Primary. What role do virtual community platforms play in academic outcomes for students at public post-secondary institutions?

Secondary. Below are three secondary study questions that support the primary question.

- How do students at a two-year public institution use virtual community platforms to support their academic performance?
- How do urban and rural post-secondary institutions compare in their use of virtual community platforms to access academic and social support?
- What kinds of services and information do post-secondary students at public institutions want delivered through technology?

Purpose and Design of a Case Study Approach

Former studies related to tutoring efficacy and virtual learning community participation used a variety of research methods to study this topic. Only one study used an empirical approach due to the difficulties in convening a proper sample size and the difficulty in isolating confounding factors, such as personal support, work schedules, and cognitive ability (Chunngam, Chanchalor, & Murphy, 2014). Empirical studies can only reveal what happened in the study but not why it happened (Adams & Lawrence, 2014).

Shen (2015) explored college students' motivation, participation, and academic performance in relationship to virtual communities and social networks and was able to show that mediation, trust, and knowledge sharing are essential to learning in this environment. Developing trust within a communication modality can lead to more interaction and support student learning. Anecdotal records supporting the outcomes from the virtual learning communities can help validate the more abstract concepts of trust, mediation, and learning.

This study will meld survey data, archival records, and observations to examine the way students use virtual learning communities to support college success. Survey data was collected as a pretest for self-determination and belonging. Archival records consisted of grades, online posts,

attendance, interview transcripts provided by a vendor, and tutor feedback surveys. Observations of live tutor sessions occurred at the end of the study and helped to validate aspects of the archival records.

Purpose. The purpose of this study was to discover how the role of virtual communities influences academic support for students at public post-secondary institutions. While virtual communication platforms are popular communication vehicles in academic use, they are typically student-driven, often without faculty input (Guy, 2012). Some users are passive participants who simply view posts, rather than actively participate in conversations (Garcia et al., 2015). Within any learning community, active participation is necessary to form cohesive relationships that foster critical reflection and cognitive growth (Creighton et al., 2013; Mezirow, 1990). Adapting the VLC to overcome the passivity typically found in social media platforms was necessary for interactive communities to form that increase participation, frequent response opportunities encourage engagement and therefore support student learning (Hernández et al., 2014; Shen, 2015). Understanding how students used social media and developed supportive learning opportunities that aligned with their preferences was a vital task in providing VLC support.

Design-case study. Qualitative researcher's methods help the reader to understand how subjects experienced phenomena (Adams & Lawrence, 2014). Demystifying why students considered digital natives either use or resist using technology and social media in academic support situations was crucial in developing effective ways to support today's students (Paul et al., 2012). The case study design allowed in-depth analysis of student opinions and self-reported perceptions, which provided an excellent first step in looking at topics that lacked empirical research support, such as academic support and technology (Baxter & Jack, 2008). Case studies assist the researcher in combining input from a variety of sources; allowing triangulation of

information in constructing an analysis of the data (Adams & Lawrence, 2014; Stake, 1995). The combination of observations, archival data, and interviews served as the information sources for this study.

In qualitative research, it is necessary to define the parameters of the study, what exact data is contained within the resources, and what limits exist in the chosen information (Yazan, 2015). This case study provides insight as to the role of virtual learning communities in supporting academic outcomes for post-secondary students. Student preferences in digitally provided academic supports help to clarify their perceptions of the type of virtual communities that would benefit them. It also would help to identify which curricular supports would encourage the use of online academic support within the platform.

Case studies are undertaken when the relationship between a behavior and a phenomenon are not preconceived or well known (Baxter et al., 2008). Such is the case with students' participation in virtual learning communities for academic support purposes. The students in this study had access to online virtual learning platforms designed to allow communication amongst their class peers. Triangulation of data included archival data such as grades, LMS posts, retention system notations, virtual community and social networking posts, informal student polls, and attendance at tutoring sessions. After the Institutional Review Board (IRB) at Concordia University amendments were accepted and approved, students participating in face-to-face tutoring sessions were observed.

Research Population and Sampling Method

The target population for this study was based on a convenience sample from a small public rural community college and a public four-year college. This cohort consisted of several associates of arts and sciences (AAS) programs including, business, health professions, public

affairs and services, and technologies representing eighteen separate degrees. Among the degrees, several were chosen for inclusion in a Perkins related initiative, focused on students in vocational AAS programs, that targeted higher enrollment programs with high attrition and non-transferable grades such as incomplete (I), F, D, and withdrawal (W).

Perkins funding, within the rural college, specifically defines expenditures focusing only on vocational studies programs and requiring that program delivery occur in lab settings. Lab settings help to foster the intimacy of a learning community (Association for Career & Technical Education, 2016). The following degree programs make up the subset of the study: Health Professions including health studies and nursing, technologies including electrical technology and public affairs, and services, including early childhood and human services.

The population consisted of students with majors in Health Professions programs, such as Health Studies, and Nursing, Early Childhood, Electrical Technology, and Human Services Programs including, Digital Communication & Transmedia and Electrical Technology. Enrollment statistics over the last five years indicated an average enrollment of 300 students, anticipating 280 being first-year students in targeted classes. All rural students had access to the LMS within their courses. Using a stratified sampling technique, rural students in some sections received virtual community access as an additional tool. Comparisons regarding communication frequency with tutors and academic support staff, subsequent attendance at tutor sessions, and student performance on tests, projects, and quizzes were planned for students with access to a VLC through CollegeQorps, and those with only Blackboard access.

Instrumentation

Motivation is important in understanding student use of tutoring services (Russ, 2015). A pretest was administered to all rural community college participants in the targeted sections at the

inception of the study (See appendix B). The Self Determination Scale (SDS) based on self-determination theory helped to identify individual preferences of students using a short ten-question survey divided into two subsets (Sheldon & Deci, 1993). Use of an ANCOVA was planned to analyze the influence of these factors (Adams & Lawrence, 2014). Belonging is also an integral part of learning communities. It was assumed that students who scored higher in motivation would be more likely to use the academic supports provided through tutoring sessions and virtual learning communities.

A posttest using The Social Connectedness and the Social Assurance scales, a sixteen-item survey with two subsets, measured aspects of connectedness students felt within their various learning communities (Lee & Robbins, 1995). Lee and Robbins (1995) spoke to measures of validity in the following section:

The Social Connectedness Scale and the Social Assurance Scales were constructed with a split-sample procedure on 626 college students. Internal reliability estimates for the two scales were .91 and .82, respectively. Test-retest correlations revealed good test stability over a two-week period ($r_s=.96$ and $.84$, respectively). Cross-validation for the two measures was achieved with confirmatory factor analysis with an incremental fit index greater than .90. Scale functions are described and results are discussed in light of current research and theory. (p. 231)

Tutors logged attendance records at review sessions and reported to the researcher on a weekly basis. Initial attendance was submitted, and each participant received a QR scan code card to log into and out of future sessions using a platform called TimeStation (TimeStation, 2016). This automated the recording of attendance for all participants. Grade reports for individual quizzes, tests, and projects were collected from instructors in each course. Analysis of

grade data was aligned with attendance, participation, and belonging. Student participants received feedback on the average scores, not personal scores, for participants and non-participants in the PERKS tutoring session.

Data Collection

Following the Concordia University Institutional Review Board (IRB) approval, students in the targeted sections were introduced to the research study in September 2017. Participation was on a voluntary basis and involved allowing access to grades throughout the semester and interaction in the VLC. Students who chose to participate signed a consent form for the study. Students who opted out were not included in the study.

Rural student participants received basic class communications, such as tutoring times and locations through the PERKS program, facilitated through Blackboard. All rural students had access to Blackboard while only the experimental group had access to CollegeQorps. Tutors provided information on how to synchronize student email communications with personal cell phones.

Automated attendance procedures, through TimeStation software, facilitated data collection. After an initial visit and manual sign-in, students received a welcome email and a QR scan code and student ID to participants, to log into tutoring sessions quickly. Tutors also maintained a copy of QR cards, for sign-in purposes. These procedures allowed both students and tutors to focus session time on the tutorial and reduce manual reporting. Reports for each PERKS section stemmed from tutoring attendance records. A virtual community platform offered features to connect with registered participants, to take part in discussions and polls, and to manage personal goals and business opportunities (CollegeQorps members login, 2016).

Instructors provided grades throughout the semester; some used Blackboard to record their grades but were not required to do so. Collection of consented-student-grades occurred on an as-needed basis throughout the semester. Academic support staff prepared summary reports that compared test averages of those students who used tutoring and those who did not and shared this information with participants and the instructor. These reports served as a type of positive peer pressure for students to use tutoring services (Supplemental Instruction Training, 2016). Official grades were collected at the end of the semester from Power Campus at the close of the fall 2017 semester.

Identification of Attributes

Three concepts emerge throughout this study, virtual communities, student support, and academic outcomes. It is the interaction of these three elements that can help academic support personnel to determine how best to use technology to support their students and lead to improved academic outcomes. Within this section, each attribute will be defined and the process for measurement will be given.

Virtual community. Virtual communities allow students to participate asynchronously via a web based platform within a specific setting, or course. In this study virtual communities are established in the following platforms; Blackboard, , CollegeQorps and Facebook. Blackboard is the LMS used for class support; students can access resources, submit assignments, and communicate with instructors, academic support staff and classmates. Within Blackboard, students in a given class will have access to other students, tutors, and instructors who are assigned to that class.

CollegeQorps, a closed virtual community, which was offered to half of the students in this study. Students opted to participate in the CollegeQorps platform through responding to an

invitation to register for the platform. Within CollegeQorps, students from different class sections could asynchronously communicate with students, tutors, and academic support staff. Social aspects were built into the CollegeQorps platform, which allowed for sharing of personal information as well as class topics; contests were also available in the platform.

Nursing students used Facebook, a publically available social networking platform, during the study as a communication strategy. Nursing students were able to share information, resources, and provide social support. Some nursing students did not, or chose not to have access to Facebook, restricting their access to resources and support within that platform.

Virtual communication via Blackboard and CollegeQorps was measured in this study by actual log on and posting activity. Coding of posts would occur at the study's completion. A nursing tutor provided access to preliminary Facebook posts based on the student nurses' posts on the platform: Subsequent replies were not visible. These posts were also coded for content at the end of the study.

Student support. College students relied on a network of support options to communicate effectively and maintain their academic pursuit. Social supports consisted of friends and family who provided a range of supports from childcare, monetary support, transportation, and moral boosters. Service related supports consisted of tutors, grant staff, and instructors who provided academic assistance and moral support.

Measures of student support include attendance logs at tutoring sessions, archival records from interviews, and live observations of tutoring sessions. Tutors used sign in sheets or Tutor Track to manage attendance at tutoring sessions, and reported to the academic support coordinator. Direct mentions of support in observations or within the transcripts were coded for content to identify themes

Academic outcomes. Instructors provided periodic grades reports for all class evaluations. Class averages were calculated to compare students who participated in tutoring and the virtual learning communities. The average scores were reported to students within the Blackboard platform. For example, students who used tutoring scored 4.5 points higher overall, as compared to students who did not use tutoring.

Measurements of academic outcomes were used to compare how students handled academic success and challenges, sought out tutor support, and provide insights as to social interaction on campus. These measures helped to objectively examine how grades were related to a student's college experience. Triangulation of attendance, grades, kudos from instructors, and observations helped to create a rich narrative. The interaction of several sources of data was used to gain understanding from the students' perspective.

Data Analysis Procedures

All participating students completed a short pretest based on the SDS on self-determination that consists of a short 10-item scale with two 5-item subscales. "The first subscale was awareness of oneself, and the second is perceived choice in one's actions. The subscales can either be used separately or, they can be combined into an overall SDS score" (Sheldon & Deci, 1993, p. 1). Students completed a short sixteen-item survey: The Social Connectedness and the Social Assurance Scales pre and post study. A report of the scores of students who completed both pre and posttest was compiled in a excel spreadsheet. An overall score for each participant was calculated for the SDS. Analysis procedures were planned using a t-test comparison of the control and experimental groups within each scale item on the Social Connectedness and the Social Assurance Scales.

Figure 2 outlines the process used to conduct the thematic analysis. Following the viewing of interview and archival documents, a spreadsheet was set up and the primary investigator created columns for each field of interest. This process helped to establish semantic coding, meaning found within the actual text of the transcripts. Aligning similar codes into groups provided a more in depth picture of a particular phrase or idea. Using a graphic approach the researcher then connected the emerging codes to define prominent themes. The adaption of MAXQDA, a qualitative research software program helped to examine multiple aspects of codes through different approaches. This software was employed after the study transitioned to a case study.

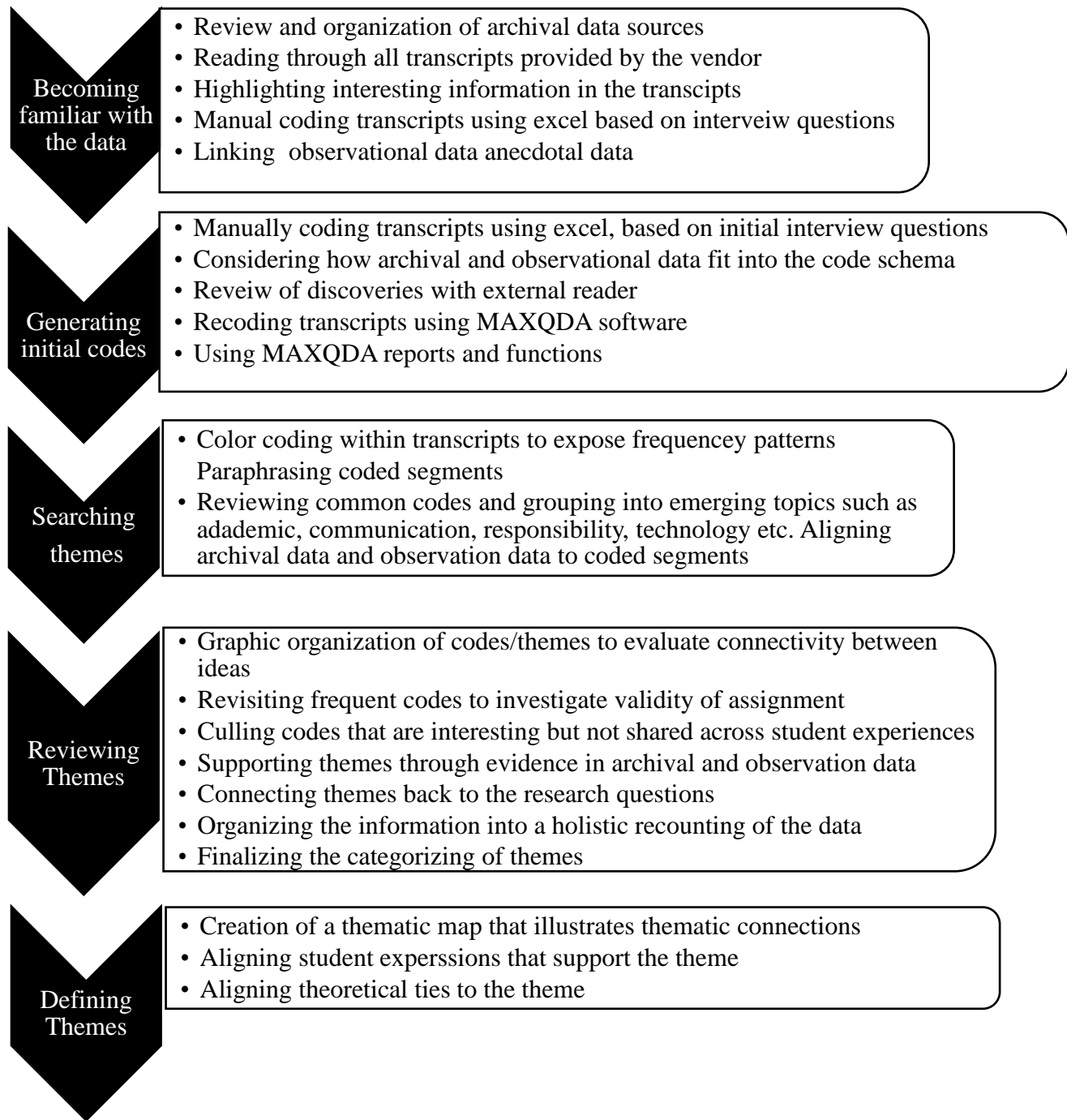


Figure 2. Thematic Analysis Process

Limitations and Delimitations of the Research Design

While research cannot generalize from the findings in a case study, a research study can lead to constructing good questions for future empirical studies. The anecdotal information

gathered from student interviews is opinion-based and reflective of individual perceptions and experience. Student's individual experiences and help to produce a narrative that reveals new insights and information.

Understanding motivational factors that encourage using academic supports, such as virtual learning communities, can play a decisive role in increased retention and graduation for college students; community college students tend to face higher risks in college completion (Dalton, 2011). This study was delimited by a convenience sample from one state-sponsored community college in a rural location and a state-sponsored four-year urban college. The population is also constrained to only career majors pursuing an AAS or BS degree who are typically career rather than transfer bound. Students' connectivity to the internet was sparse or nonexistent in some rural areas thus limiting participation outside of campus.

Validation

Internal validity examined the connections between the findings of multiple instruments. One way to insure validity of the data is through triangulation. Triangulation of sources included interview transcripts, archival records, and observations provided a rich description of the phenomena studied (Stake, 1995). This data was amassed over one college semester. All students received the same communications during the study; however, students in the experimental conditions were offered additional social media options through voluntary registration in a closed virtual learning community.

Figure 2 outlines the process used to conduct the thematic analysis. Following the viewing of interview and archival documents, a spreadsheet was set up and the primary investigator created columns for each field of interest. This process helped to establish semantic coding, meaning found within the actual text of the transcripts. Aligning similar codes into

groups provided a more in depth picture of a particular phrase or idea. Using a graphic approach the researcher then connected the emerging codes to define prominent themes. The adaption of MAXQDA, a qualitative research software program helped to examine multiple aspects of codes through different approaches.

Coding of communication between students and tutors, student and student, and student and academic support staff occurred. Tutors recorded attendance at tutoring sessions by either sign-in or use of a swipe method. Instructors provided grades to academic support services with final grades supplied by the college registrar.

The rich and thick description that came out to the data helps to establish credibility. Adding transcripts from another study the CollegeQorps vendor had previously gathered helped to establish the similarity of experience for the students in this study. Both commuting rural and urban students from two-year and four-year colleges shared the experience of use CollegeQorps as a virtual learning community.

Expected Findings

Laskey and Hetzel reported that students generally excel when they become more involved in their college program and studies (2011). However, virtual participation in online learning communities is a relatively new aspect of participation in college. Margaryan et al. (2011) believed that millennial students are so at ease with virtual communities that they will use this format to find belonging and improve their learning outcomes. It is expected that levels of engagement in the virtual community and corresponding effects will influence results. For academic support offices, it will be vital to know if allocating funds for virtual learning communities will increase the use of academic resources and improve student learning. Tutors

modeled the use of VLC interaction and encouraged student participation through traditional LMS settings and the VLC.

Ethical Issues in the Study

Approval from the Concordia University IRB was sought before any implementation occurred. Students were told they were participating in a study on technology and its effects on tutoring but not about virtual learning communities, so as not to bias any participant toward that topic. Rural student subjects signed a consent form before inclusion in the study, and no ethical issues occurred. Grade and attendance data were reported as summary totals, not as individual scores, to protect individual identity; no student names were used within the study.

Data required employee passwords to access grades. Attendance data was aggregated and stored on a password-encrypted computer at the college. Tutors signed a confidentiality statement upon being hired and were informed that all data is confidential and will be deleted after the conclusion of the project. Tutors reported student attendance at tutoring to both the academic support coordinator and the instructor.

Chapter 3 Summary

Effective academic support practices support post-secondary college students, especially in their first year of college. Embracing the needs of digital natives has proved challenging for many college personnel (Margaryan et al., 2011). Investigating how college personnel augments student-learning outcomes by providing academic support in virtual learning communities could lead to new and useful ways to help students succeed.

Connection of students to resources must occur, both on campus and virtually, in order to satisfy the desires of digital natives (Bowen & Guthrie, 2013). Students live on their phones and mobile devices both in and out of classes (Margaryan et al., 2011). Incorporating the students'

preferred communication method of students can draw them into the learning community of the college. Overcoming student reluctance to use traditional academic resources is a continuing challenge (Paul et al., 2012). Qualitative methods allow for in-depth analysis of student behaviors and provide feedback allowing keen insight into student preferences (Baxter et al., 2008). Creative approaches that embed virtual learning communities within academic support settings evolve when researchers recognize the social aspects of digital natives.

Chapter 4: Data Analysis and Results

Introduction

Students from public post-secondary colleges were chosen to understand their engagement with virtual learning communities. Students provided data that helped the researcher understand their experience in using virtual learning communities. The results clarify student interest and engagement in using technology for academic tasks. Findings indicate students' direct preferences in the types of virtual learning communities to support college success. The researcher analyzed the effect of academic outcomes across several variables including grades, and attendance at tutoring, communication frequency, and tutoring situations. Changes made during the implementation are explained in the research and methodology analysis.

Description of the Sample

The target population consisted of 314 students, 197 students provided consent, and completed two pretests, 120 completed the posttest, 58 students in the VLC and 48 students in the control group completed both pretest and posttest surveys. The plan was to analyze both pre-and-post scores using linear regression; those plans were abandoned due to a lack of participation.

The actual participation in the virtual learning environment was much lower than anticipated: the study provided 180 students with access to an academic virtual community platform (CollegeQorps). Only 44 of these students ever registered or accessed the site. Most participants on the platform only performed the original registration and never posted again; in total, 90 log-on sessions took place; 11 students logged on twice, two logged on three times, three students logged on four to six times and three students logged on nine to 14 times. Due to the absence of a true intervention, the researcher amended the proposal to convert it from a quantitative study to a qualitative study; submission of an IRB amendment gained approval to add an observation of students as a data component. Subsequently, the final population sample

consisted of eight rural students and four urban students who participated in interviews regarding their use of the VLC.

Research Methodology and Analysis

The research methodology for this study changed mid-course from quantitative to qualitative because of insufficient participation to support a quantitative analysis of data. At midterm, it was determined that the planned intervention was unsuccessful; a lack of active participants was available to proceed with a quantitative causal-comparative study. Initially, the research was designed as an empirical research project, studying the impact of participation in a VLC, which included pre and posttest in the study. However so few online interactions occurred that there was not enough data to continue that line of inquiry; the project was then revised, resubmitted to IRB and approved as a qualitative study. An amendment was submitted and gained approval by the IRB to include observations of tutor sessions as part of the data for the study on October 23, 2017.

As the study progressed, students assigned to the CollegeQorps treatment failed to use the platform as expected. Since this was a pilot using CollegeQorps, the company director was eager to learn why students did not choose to participate in the virtual learning community. The director then sent out an interest survey to the students assigned to CollegeQorps (See appendix K). The vendor, then set up interviews with the students who responded to the initial survey. The interviews were then transcribed externally and shared with the primary investigator.

While the data collected was not used in a quantitative design, it was applicable for case study analysis. Data collected for the social belonging survey and self-determination survey were dropped from the study. The CollegeQorps vendor sought interviews with students assigned to

the platform. CollegeQorps provided transcripts from eight students regarding their experience with the social media platform at the end of October 2017.

The qualitative research design chosen was a case study, focusing on the role of virtual learning communities in academic support from a student perspective (Baxter et al. 2008). Case studies provide the proper fit for this study because unexpected circumstances arose. The unexpected reluctance of students to use the provided VLC, among students deemed digital natives, posed new and interesting questions that only the student insight could provide.

After midterm in the fall 2017 semester, the IRB approved the inclusion of the supplemental questions (See Appendix?) and allowed observational records of live tutoring sessions into the study data collection. During the observations, the researcher focused on student participation and input rather than tutor facilitation. Tutee attendance attrition during the last four weeks of the semester resulted in fewer observation opportunities than planned (See Appendix Q).

Students had both email and in-person opportunities to socialize, ask questions, network, get direct assistance, and discuss class logistics during tutor sessions, via Blackboard, and via the student nursing Facebook page. Some tutors used an informal Pirate Poll surveys (See Appendix R) to collect session feedback; students could indicate their mood on a scale of one to five, with one being in a lousy mood and five a good mood. Students could also leave feedback about their experience in the session, what they liked, or wished they had said. Pirate polls were anonymous but could be linked back to a class section through their collection date and assigned tutor.

Case study focus. The virtual community platform provided access to transcripts from product development interviews conducted with students from a public 4-year institution in an urban setting. These transcripts served as a secondary data source. Cross-reference of self-

reported behavior described in transcript interviews with other available information, such as use logs and attendance sheets helped to validate responses.

Communications within the VLC occurred in a Beta version. Throughout fall 2017, analysis of semester transcripts regarding the following data was categorized into a crosswalk of codes found in transcripts and supporting data (See Appendix P).

Patterns that emerged within the data aligned to create themes were analyzed for meaningful content. Thematic cluster analysis within the interview transcripts revealed higher concentrations of topics; subtopics, which occurred for many of the students interviewed, helped to reveal the story of the student experience. Specific interview segments helped to support data interpretation.

Student attendance at tutoring sessions, a central component of the study, was linked with presence or exclusion from the online social media platform, CollegeQorps. Comparisons of attendance of participants who attend tutoring, those who attend tutoring five or more sessions, and those who did not attend tutoring at all in relationship to grades allow analysis of student participation in tutoring and the effect on grades. The Academic success office coordinator shared test grade averages with students and instructors for participants and non-participants in PERKS via Blackboard. Typically, higher averages occur in those who have attended the tutoring sessions (Jones, 2013). A summary report combined PERKS attendance with final grades.

Data sources. A corporate researcher used a pre-interview to solicit potential students (Appendix K) for completing short interviews and created an interview transcript (Appendix L) to conduct the actual interviews. Archival records included academic records, consisting of test grades and final grades for the semester, Blackboard posts within class sections, Facebook posts on the student nursing group, CollegeQorps records of registration and log on attempts, Starfish

posts for student warnings and kudos, informal student feedback at tutor session using pirate polls, along with tutor attendance logs. Analysis of data sources collected for each interviewee provided information regarding grades, final grades, gender, program, and attendance at PERKS tutoring sessions and login session on CollegeQorps. These measures assisted in verifying the accuracy of interview information, for example, the number of login session on CollegeQorps, as compared to use reports in interviews.

Tutors logged attendance records at sessions and reported on a weekly basis. After their initial attendance, each participant received a quick response (QR) scan code card to log into and out of future session using a platform called Testation (TimeStation, 2016). TimeStation automates the recording of attendance for all participants and aggregates the attendance information. Instructors provided grade reports for individual quizzes, tests, and projects in each course. Students and instructors were sent a summary spreadsheet of students' grades for those who attended tutoring, and those who did not, throughout the semester.

Coding of observations, Blackboard posts, and student nursing Facebook posts helped to validate codes and themes, within each data source, that were aligned in the crosswalk to the student transcript records. The final themes of academic concerns and strategies, supportive people and resources, effective communication practices, student technology use, and student responsibilities that affect coursework were compiled into the body of the study. Results were aggregated into a logical response to the original research questions of this study.

Student participants received feedback via Blackboard or CollegeQorps on the average scores for participants and non-participants in the PERKS tutoring program. Quiz and test grades were used to compare participants and non-participants within the semester, providing a basis for students to consider attending tutoring. Final grades, as recorded by the registrar, served as a

measure of student learning outcomes. Unfortunately, the online learning community failed to evolve, very few students logged into the site, and almost no communication occurred on that site. The lack of student community participation became evident in the observations, which reflected a rehashing of the lecture rather than an interactive student learning opportunity. Even within the planned student observations, several cancellations occurred due to fewer than three students present during tutoring sessions. These session records helped to validate attendance and tutor session content and reinforced the difficulty of getting students to use resources.

Third-party interviews, provided by the virtual community platform vendor (CollegeQorps), consisted of eight rural participants, and four additional interviews conducted by the vendor previously, as part of its product development research. The students from those interviews attended larger, public 4-year institutions in an urban metropolitan area. Rural participant interviewees were students in the target population; they consisted of six females: two early childhood traditional students, three health studies returning adult students, and one returning adult nursing student; and two male students: one a returning adult in electrical technology and a high school student in the health studies program. The urban transcripts were anonymous and did not contain direct information on majors or provide gender identification.

Case study. Delving deeper into individual student accounts provided insights as to why the students chose not to use the pro-offered VLC as academic support. The availability of virtual communities for digital natives in college classes has not only changed how they access information but also how they function in their daily lives (Prensky, 2012). A case study helps to connect the social and cultural aspects regarding this generation and their use of virtual communities.

The case study approach allowed for the consideration of both archival records and the exploration of perceptions and action concerning technology and social networking. Synthesis of the archival records, observations, and interview transcripts create the body of this study. The result is a rich narrative that explores the busy lives of students and how they choose to employ virtual learning communities to make their life easier. Understanding the daily challenges of managing workloads, class loads, and personal time encompassed a wide variety of technology strategies that allowed for improved time management and increased efficacy in students' busy lives.

The juxtaposition of this situation is that the college faculty and staff are often people who learned to function without the instant accessibility that digital natives expect. Helping college staff to understand what is different and promising about the current generation could help bring education and its' supports into alignment with what college students need today. Since technology changes quickly, it is essential to connect with students and see how to best support their educational endeavors.

Becoming familiar with the data. Vendor-provided transcript data was incorporated into the study in the later part of the fall 2017 semester. All transcripts were scanned and then re-read several times. Subsequent highlighting of interesting or frequently occurring information provided the first reduction of the data. Initially, a manual method identified items of interest, based on the actual interview questions, to sort the interviews into codes and themes, resulting in approximately twenty codes centering on themes of technology, and communication among rural community college students.

The transcripts were then re-coded using MAXQDA, a coding software program, based on the discoveries in the manually coded transcripts. Within this process, some of the initial

codes remained others became irrelevant, and new codes began to emerge. The second set of interviews based on the same vendor information was then included but focused on an urban population in a community college. The merger of these two interview transcripts represents a single case study with embedded units, allowing for comparisons within, between, and across the similar but separate populations, which allowed for greater validity through a comparison of multiple occurrences of compatible phenomena (Baxter et al. 2008). Researcher code analysis took place several times with periods of two to five days occurring between viewings. Using MAXQDA, the researcher revisited those codes with more than forty hits to identify sub-units within the codes.

Searching, reviewing, and defining themes. Qualitative researchers use MAXQDA to classify responses, color code segments, and organize data. A review of coded segments, using MAXQDA, within interview transcripts helped to expose frequency patterns and reevaluate the categorization of codes visually. Paraphrasing of coded segments assisted in focusing the researcher perspective of the segments, allowing for an abstraction of the data.

Manipulation of codes and themes through graphic organizers, called maps, presented a visual model to evaluate the connectivity between various data sets; such are rural/urban, male/female, and traditional/returning adult student and the themes. Revisiting frequently occurring codes to investigate the validity of assignment resulted in some re-coding to determine if the data made sense and supported the theme to which it had been assigned.

Culling codes that were interesting but not shared across student experiences served as a final step in reducing the data and helped validate shared experiences across the transcripts. Alignment of evidence found in archival records and observation data helped to support or debunk student experiences reported in the transcripts. Connecting themes back to the research

questions helped to organize the information into a holistic recounting of the data and supported finalization of categorizing of themes.

Thematic analysis. Use of thematic analysis varies in format, allowing the researcher extreme flexibility in how the process occurs. It is, therefore, necessary to have a structured approach to the analysis; Maguire et al. (2017) suggest using Braun & Clarke's (2006) 6-step framework. This method involves becoming familiar with the data through multiple readings and notations, generating initial codes, searching for themes, reviewing and defining themes, and finally writing up the analysis. These graphics show the procedures used to map out the information sources that support this study.

Through thematic analysis of student transcripts, themes emerged related to student technology use in academic settings, the use of social media to assist academics, social interaction among community college students, support preference students used, their preferences of communication, and information delivered through push notifications via technology. Thematic analysis focused on identifying patterns and themes and allowed for an inductive approach, where the data revealed commonalities in the subject responses (Maguire & Delahunt, 2017). Exploration of the coded segments began by arranging similar codes together, which exposed themes that emerged around academics, communication, and responsibilities. Familiarity with the subject transcripts allowed identification of items of interest or high frequency. Frequency codes are often identified through a semantic process that uses a lexical approach, such as coding every instance of a particular word (Baxter & Jack, 2008). Some codes evolved through similar subject experiences that exposed latent meaning, such as difficulties or feelings that came through the transcripts.

Review of discoveries. A synthesis of transcripts, observations, and archival data provided a triangulation of data relevant to the study. A spreadsheet crosswalk of all data sources charted congruencies of codes and emerging themes (Appendix P). This process offered both validation and confutation of student experiences. For example, tutor attendance records and observations of sessions confirmed student use of tutoring or students stated they frequently logged into CollegeQorps, but the student records as reported by the vendor show minimal participation.

Summary of Findings

A reduction in the clusters of codes resulted in themes of academics, communication, technology, support resources, and student responsibility. Responsibilities became an umbrella concept for themes, including codes such as self-care, work, childcare, and academics. Within the academic theme, several sub-units formed homework, mentorship, tutoring, and grades. Support issues for the students involved: seeking or being tutors, consulting with advisors, meeting with peers for study support and meeting with or receiving advice from teachers. Communication topics focused on the types of communication ranging from face-to-face to online interactions to online messages. Preferences in communication methods included the use of technology for texting, emailing, and social media. Email was a favorite, but social media sites such as Facebook, Instagram, arose as topics in the interviews.

Presentation of the Data and Results

This study compiles data based on transcripts from four students at an urban public four-year college and eight students at a rural community college. Archival data and observations were aligned with the data found in the transcripts. Data organization includes the process of analysis, the discovery of themes, assignment of codes and sub-codes, the integration of archival records, discoveries in observations, and student statements in vendor transcripts.

Thematic schema. Figure 3 illustrates the major themes, which occurred throughout the student interviews. Creation of a thematic map illustrated the connections and their directionality.




Creating a virtual community for academics	+	Adapting academic support for today's students	=	Post-secondary student success
Which supports		Which provides		Resulting in
				
Academic concerns and strategies		Supportive people and resources		Improved student learning outcomes
Student technology and use preference		Effective communication to support student success		Better retention and job placement
Students responsibilities that impact student success				

Figure 3. Thematic Schema

Upon finalizing the themes, student expressions aligned with the supporting data to reveal the major themes.

Code clusters. The charts below show the major themes which evolved in the study and the sub-code clusters. These figures were produced by replicating the map feature in MAXQDA, which aggregates the occurrence of codes identified in the transcript interviews. High-frequency codes were identified as major themes, including academic, responsibilities, support, communication, and technology.

Figure 4 displays codes that related to academics. Students mentioned study strategies, homework, grades, difficult work, mentors, and services. Services included support options at college, childcare, library services, and even clubs and service opportunities during free time. When students did not know how to do something, they relied on methods and resources, which they had experienced in high school.

Hierarchical Code-Sub-codes Model								
Academic Codes (10)								
Services (12)				Didn't know how (13)	Study strategies (18)	Mentor (17)	Grades (13)	Home work (10)
Subsets				Subset				
↓	↓	↓	↓	↓				
Support (59)	Children (25)	Leisure time (13)	Library (8)	Highschool connections (5)				

Figure 4. Academic Codes

Figure 5 focused on student responsibilities, both in college and in personal life. Students shared their concerns about having a lot to do, including college work, family responsibilities, work, self-care, and giving back to the community. College responsibilities were mentioned most frequently, including interacting with instructors, dealing with class issues, maintaining GPA in response to scholarships and choosing to withdraw from a class or college altogether. A few students mentioned supporting extended family members or children and several mentioned service to others.

Hierarchical Code-Sub-codes Model									
Student responsibility codes (26)									
School (12)					Help family (4)	Work (8)	Give back (1)	Self-care (8)	Have a lot to do (3)
Subsets					Subset	Subset	Subset		
↓	↓	↓	↓	↓	↓	↓	↓		
Professor (42)	Class (20)	GPA (2)	Internship (2)	Drop a Class (1)	Grandparent (5)	Quit (1)	Serve others (7)		

Figure 5. Responsibility Codes

Figure 6 provides a more in-depth look at programmatic offerings such as math and writing centers, grants that provided peer and professional tutoring, and advisors helped to create a supportive environment at college that supported their academic achievement.

Hierarchical Code-Sub-codes Model							
Support codes (59)							
Tutoring (74)		Advisor (11)	TRiO (9)	Writing Center (5)	Supportive space (3)		Math lab (4)
Subsets		Subset		Subset	Subset		
↓	↓	↓		↓	↓	↓	
PERKS (7)	Becoming a tutor(5)	Tips and advice(1)		Papers (2)	No support(1)	Follow up support(2)	

Figure 6. Support Codes.

Figure 7 portrays the codes related to communication pathways at college. Students reported using technology for academic and social purposes, having direct access to notifications helped them manage college requirements. Students mentioned the importance of face-to-face communication and discussed feelings of loneliness and isolation.

Hierarchical Code-Sub-codes Model										
Communication codes (21)										
Technology (6)						Social (35)	Isolation (20)	Face-to-face (13)	Notification (7)	Loneliness (5)
Subsets									Subset	
↓	↓	↓	↓	↓	↓				↓	
Device (10)	Contact mode (44)	Easy use (21)	CQ (29)	Social media (10)	Limitations (14)				Flyers (1)	

Figure 7. Communication Codes.

Figure 8 further analyzes the technology aspect of communication regarding the choice of device: preferred contact methods, ease of use, access to virtual communities and social media.

Items that were coded as a device included email, phone, and web. Ease of use codes also mentioned web access. Social media codes included Facebook and Snapchat.

Hierarchical Code-Sub-codes Model								
Technology Codes (6)								
Device (10)			Contact mode (44)	Easy use (21)	CQ (29)	Social media (10)		Limitations (14)
Subsets				Subset		Subsets		
↓	↓	↓		↓		↓	↓	
Email (28)	Phone (25)	Web (13)		Access to Web (10)		Facebook (15)	Snapchat (2)	

Figure 8. Technology Codes.

Archival records. Several sources of data provided opportunities to triangulate the data and improve validity. Final grades were available from the Registrar at the end of the semester, the inclusion of grades helps to validate successful acquisition of course skills and learning outcomes.

Tutors reported attendance throughout the study. This information was used to verify information provided in student transcripts regarding attending tutoring sessions.

Student use of CollegeQorps was reported through the vendor and used to verify information gathered from the transcripts. Student nursing group Facebook posts were obtained through a tutor. Starfish retention system posts, regarding concerns and kudos, were viewed and summarized. Tutors used pirate polls informally to capture student feedback on tutoring sessions

Archival record summary. Table 2 compiles the archival records on grades, attendance, and VLC participation.

Table 2

Archival Summary

<i>Student</i>	<i>Final Grade</i>	<i>Tutor session attendance</i>	<i>CollegeQorps logon attempts</i>
7	B	6	2
8	B	0	5
9	A-	6	1
6	A	0	1
5	B-	14	1
10	B+	0	2
11	B+	4	8
12	C+	0	4

Note. Archival record summary compiled from interview transcripts for grades, tutor session attendance and, VLC use.

Blackboard posts, emails, and announcement in nineteen class sections were reviewed to validate instructor and student use of Blackboard as a communication tool. This data helps to validate student reports of using Blackboard to communicate (See Appendix N).

One of the nursing tutors provided a printout of student Facebook posts for student nurses; these posts were initial conversation starters without the ability to see subsequent posts in the thread. Only posts during the fall semester were included in this study.

Fifty-nine posts occurred between September 1 and December 15, 2017 and were coded based on content, resulting in groupings of academic concerns, clinical concerns, grades posting

and concerns, schedule changes, meme posts, networking regarding job opportunities, student nursing association club posts (SNA) and social posts.

Figure 9 reports the themes that identified during the period of the study, from a private student nursing Facebook group. Academic posts consisted of topics including academic, clinical, grades and schedules, whereas social posts focused on Student Nursing Association (SNA) information, social posts, networking, and memes.

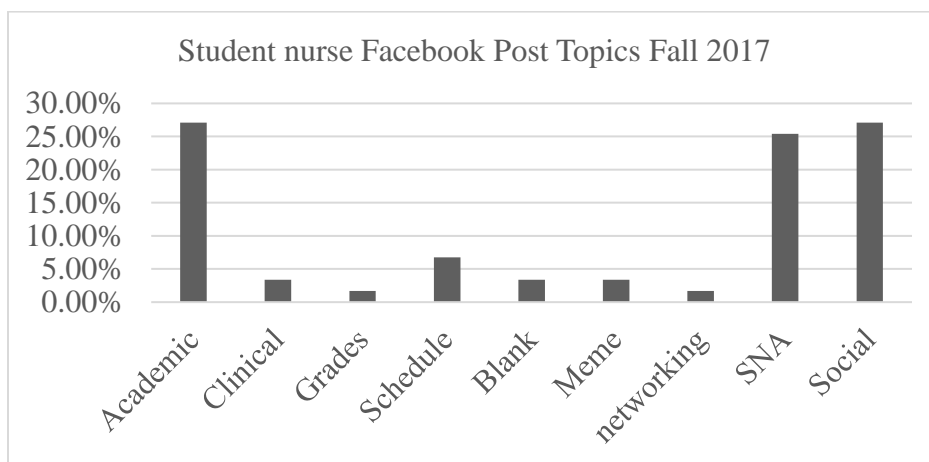


Figure 9. Student nurse Facebook data

Starfish kudos, and grades Starfish retention information served as an open communication format and provided validation of student efforts; instructors could flag students with problems in the class, and the program allowed giving student kudos for excellent work in class. This measure helped to validate instructor communication and student recognition for good work.

Table 3 aligns information regarding students, who were interviewed, the number of kudos a student received from instructors, and their final grades.

Table 3

Starfish Retention system Kudos and Final grades

Student	Number of Kudos on Starfish	Final Grades
5	1	B-
6	2	A
7	0	B
8	4	B
9	1	B+
10	1	B+
11	0	B+
12	0	C+

Some tutors used pirate polls to record, anonymously, student mood before and after tutor sessions. Student comments were coded and sorted into topics. Most students indicated an elevation in their mood after having participated in a PERKS tutoring session. Table 4 shows the frequency of codes that occurred on anonymous feedback notes after the tutoring session. Comments on content, test pre, and feelings were mentioned more often; however, students also identified tutor efficacy, activities, asking questions and resource in their feedback.

Table 4

Pirate Poll Topics

Total	Test Prep	Feelings	Content	Activity	Support	Tutor efficacy	Resources	
55	9	8	16	2	1	3	1	2

The students' pirate polls responses also asked for personal mood levels before and after the session Table 5 shows the changes in mood recorded on the student feedback. The majority of feedback reported that there was a definite increase in their mood after attending the tutor session, some left this information blank, and some reported no change in their mood during the session. One student indicated a decrease in mood after attending the tutor session.

Table 5

Pirate Poll Mood Levels Reported After Live Tutoring Sessions

<i>Mood up</i>	<i>Mood level</i>	<i>Mood down</i>	<i>Mood has blanks</i>
40	7	1	1

Note. Changes in mood for the 55 responses showed mostly positive effect

Substantial student attrition and limited use of the intervention negated the ability to conduct a quantitative analysis of these data sources. However, previous data sources can provide useful information in association with the observations and transcript records collected (see Appendix P). Additional data was added for observations.

Observations. Observations added to the study helped to investigate the lack of online participation in the VLC. Visits to tutor sessions provided further evidence that the sessions were replications of the lecture in the classroom rather than interactive group study sessions. Twelve observations were scheduled during review sessions, in classroom settings with the tutor and students present, during the last five weeks of the semester, but only six took place due to low or no turnout of students for the sessions (see Appendix Q).

Students present in those sessions explained to tutors that others did not attend because the test had already occurred or there was a conflicting meeting on campus. The sessions reverted to the lecture-based format that was typical for these sessions. Opportunities did arise for casual observations when students dropped by the researcher's office. In these instances, a few students accidentally deleted their accounts and asked for assistance to reconnect. One student expressed annoyance at the need to visit yet another web site for school purposes, citing a lack of time and a sense of being overwhelmed with communication avenues at the college. Because these meetings were ad-hoc an observation ensued simultaneously.

Secondary data sources- interview transcripts. Since the CollegeQorps platform was a new venture for the vendor, the company was interested in getting feedback from the students within the study. This company was referred from the dissertation mentor; Who also had a relationship with the company and paved the way for the pilot program. The vendor sent out a survey to students using the student emails provided for the system (see Appendix K). The vendor followed up with students who responded to the initial survey regarding CollegeQorps and conducted in-depth interviews. The vendor contacted the researcher to discuss the information found within the interviews and offered the interview transcripts as support for the study. The vendor also offered other similar records obtained from a previous group of users from an urban community college.

The vendor supplied transcripts from a group of fall 2017 rural students who were interviewed on their use of the platform and the support they used in college. Transcripts of four additional urban students from 2016 addressed similar topics and added to the data collection process. These interview transcripts served as secondary sources of information. Upon receipt of the transcripts, the researcher manually coded the transcripts based on the interview questions; this provided a basis for inquiry when revisiting the transcripts and used a coding software program, MAXQDA. The researcher revisited transcripts individually, assigning codes to items of interest and importance. This process was repeated a minimum of three times, with several days lapsing between rereading the data. As codes accumulated, analysis of high-frequency codes, such as responsibility, support, and technology revealed consistencies among subjects' interviews. Initially, academic, self-efficacy and communication themes developed out of the aggregated data.

The researcher revisited the transcripts several times with breaks of several days between reviews, over two-months during December 2017 and January 2018. Over 1,000 coded segments revealed themes of communication, academics, support, and responsibilities. Further analysis resulted in parsing out technology as a major theme, with communication becoming a subset and separating the human, resource-related, and programmatic aspects of support. Agreement across student accounts provided validity the themes that evolved. Grids of student statements and supporting documentation provide an organization within each major theme. An overall structure of the codes that occurred for each theme opens the analysis, with subsets of the individual code responses following. The synthesis of these data sources can help to answer the questions the major and secondary questions at the heart of this study.

Comparisons between sets of data. Individual student responses were aggregated to study how different groups responded in the interviews. In particular, age, location, and gender comparisons showed variations within the subject group. Figures 10, 11 and 12 show unique responses related to the variable and those responses that are shared within the variable

Traditional aged vs. returning adult college students. Figure 10 compares the responses of traditional students age 18-21 and older adult college students. All students interviewed shared concerns with being actively involved in the college setting. These students were very busy but still had to support themselves and family members financially, and emotionally. While both age groups mentioned grants, traditional students were often the first in their family to attend college. Younger students were looking for support and trying to survive the college experience. Adult students occupied with families and childcare issues chose not to pursue friendships at college. The older students mentioned hands-on experiences, a degree of self-doubt, and sought out

support options at college. These depict the codes that emerged in the transcripts, and how they compared from a traditional-aged student group and returning adult perspective.



Two Cases Model									
Traditional students' codes				Shared traditional/adult students' codes			Adult students' codes		
Smiling	1	Traditional aged codes	1	Have a lot to do	1	Adult Students codes	Self-doubt		1
First gen college	1		1	Write papers	1		Follow up services		1
Commute	1		1	People who care	1		Open lab		1
Grandparents	1		1	Proximity	1		Hands-on		1
Manage load	1		2	Engaged	1		Preschoolers		1
Difficult test	1		1	Assist family	2		Childcare		1
CSTEP	1		1	Supportive environment	2		Embarrassed		1
No support	1		2	Grants	1		No friends at college		1
Tips/advice	1		3	No follow through	1		Sources of support		1
Orientation	1		1	Time management	3		Talk outside class		1

Figure 10. Traditional versus adult students.

Comparison of urban segments and rural coded. Figure 11 compares the responses from urban and rural college students. Family concerns and need for support appeared for both sets of interviews. Students relied on knowledge from high school settings and sought out supports in college, such as the writing center. The urban set mentioned the importance of having a safe space to learn and maintain scholarship eligibility through good grades. The rural counterparts talked about commuter concerns and getting help for challenging class work. Most students were commuters, but travel details were included in the rural settings more often.



Two Cases Model								
Urban students' codes	#		#	Shared codes urban/rural	#		Rural students' codes	#
Safe space		Urban students codes	1	Grandparents		Rural Students codes	Self-doubt	1
Advocacy	1		1	Try to survive-manage load	1		Follow up to check on services	1
Scholarship	1		1	No support available	1		Open lab	1
Dropped a class	1		1	Have a lot to do	2		Hands-on	1
Give back to community	1		2	Office hours	2		Preschoolers	1
Consequence	1		1	Assist family	3		Childcare	1
Quit working or college	1		2	People who care	2		Embarrassed	1
Being a tutor	1		2	High school connections	3		No friends at college	1
End of day	1		1	Writing center	3		Sources of support or knowledge	1
Flyers on bulletin boards	1		1	Disappointed	4		Talk outside of school	1

Figure 11. Urban verses rural students.

Comparison of female and male coded segments. Figure 12 compares female and male student responses in the transcripts. Male students were concerned with internship responsibilities, having a safe space to learn, and providing service to others. Females expressed some self-doubt, perhaps stemming from first-generation experiences. Maintaining a good GPA, difficult tests and trying to survive appeared in the female transcripts but not the males. Both genders mentioned people that care but males spoke of not having friends in college, while females mentioned grants and family members in their transcripts.



Two Cases Model								
Male students' codes	#		#	Shared codes male and female students'	#		Female students' codes	#
Safe space	1	Male students codes	1	Write papers	1	Female students codes	Smiling	1
Internship	1		2	Assist family	1		Self-doubt	1
Follow up services	1		2	Minorities	1		GPA	1
Talk outside class	1		1	Supportive environment	2		First gen college	1
No friends at college	1		1	Writing center	3		Commute	1
Manage load	1		3	Math lab	1		Grandparents	1
Learning	2		3	People who care	1		Manage load	1
Serve others	2		3	Disappointed	1		Difficult test	1
Paperwork	2		1	Network	3		CSTEP	1
			1	High school	4		Tips/advice	1

Figure 12. Gender differences academic issues: struggles and solutions.

Academic success and challenges. Academic success relies on balancing the demands of college by getting to know what instructors expect, handling issues as they arise, and believing that success is possible. Table 6 aligns the percentage of codes with professor support, handling class issues, self-efficacy, and struggles in academia. The chart also identifies how the code was defined and the number of students interviewed who mentioned the code.

Table 5

Major Theme 1 Academic Success and Challenges

% Of occurrence in transcripts	Code	Sub-code	Type of code and definition	# Of students mentioning code
19.9%	Professor support or guidance		Semantic- instructor/teacher/professor Provided guidance to student	10/12 students
9.5%	Handling class issues		Latent- students shared topics that occurred in their college experience	8/12 students
9%	Self-efficacy Believe I can succeed		Latent- students reported success through various strategies	6/12 students
8.5%		Study strategies	Semantic- students shared review, notetaking, and study groups strategies to improve academic performance	7/12 students
8%		Find a solution	Latent- students identified a workable solution to their class issue	8/12 students
6.1%		Grades	Semantic- grades at the end of the semester	8/12 students
	Struggles in Academics			
6.1%		Didn't know how	Latent- students identified areas where they lacked knowledge	6/12 students
5.7%		Confused	Latent- students reported they were unsure of how to proceed	5/12 students
4.7%		Homework	Semantic- students discussed homework issues	6/12 students
3.3%		Overwhelmed	Latent- Students expressed frustration regarding a topic	6/12 Students

Most students were taking five courses; some worked at the school or paid internships in their major. Students were concerned with doing well in their classes, and some mentioned the need to maintain their GPA for scholarships. Students relied on instructors as a primary support system, whether asking for class support or making important connections on campus. Some students mentioned going to office hours if they wanted to speak to an instructor; those that did

follow through with going to office hours found support, but some reported they had not used that resource. Table 7 provides examples of student statement regarding support from professors, tutoring attendance and kudos on the Starfish Retention system.

Table 6

Professor Support

Student	Statement	Attendance PERKS	Kudos Starfish
5	The professor was so helpful. In the hallway like a year later and she said, "Do you know about this program called h-pod?" and I said, "no." She said, " you need to come with me, I'm going to take you to the woman you have to talk to."	14	1
6	<i>Interviewer... who would be the first person that you would think to talk to about needing help?</i> If I can't find out on my own, I go to the professor during office hours they are pretty accessible.	0	1
12	I talked to my teacher yesterday about that, and he explains that it was 20% of my final grade and what I really needed to do was to get between an 80% and 100% to pass this class.	0	0

Academic challenges. Connecting students with academic support options occurred through professor syllabi, or announcements, tutor visits to class, and Blackboard posts regarding upcoming sessions; however, some students wanted a poster or advertisement to share this information. Some students had trouble learning to manage schedule challenges, which resulted in confusion, and having to make tough decisions, such as dropping a class. The students' hectic schedules placed additional stress on study time and accessing academic support. Students opted to rely on their strategies, or lack thereof, rather than seek out help. Table 8 aligns student statements with attendance at tutoring and final grades.

Table 7

Academic Challenges

Student	Statement	Attend PERKS Tutoring	Final grade
12	I had a speech that I had to do in English, and I am not good at speaking...I did not do my speech. Yeah, I got scared and did not do it, but I should have done it. I regret not doing it.	0	C+
7	I'm not really strong in math and I really really hate polynomials which is that whole chapter on polynomials, I'm hoping the next one will be easier, I like logarithms a lot better. Yeah, I do not like polynomials at all.	6	B
6	The process in general, I am a 1st generation college student. I didn't really have help with the college process and sometimes like things I need to do are not really clear to me	0	A
5	I am busy. I like to be busy; I like to stay active I really don't know what to do, if I'm not busy I find something to do because I don't know what to do with myself.	14	B-
11	With the past test, I took in sociology, I did not do very well, and I just need to know that I need to study more and look into it and not rush myself when I am studying and pay more attention to my notes.	4	B+
8	Again, there is an open lab on Friday from 12 to 3 that I have not been able to go to because of my work.	0	B

Success strategies. Students addressed academic issues proactively through the effective use of leisure time and reaching out for help. Table 9 shows how students found solutions in breaking down difficult tasks into manageable sections and using technology to access resources or capture important class information. Personal issues such as presentation anxiety, memorization, and planning for healthy meals helped students to take control of their situation and develop more optimistic attitudes toward academics.

Table 8

Success Strategies

Student	Statement	Attend PERKS Tutoring	Final grade
7	If I have a problem. and I can't remember the formula I go to the online textbook and I find that formula and snip it and clip it to what I'm working on so I can remember the formula.	6	B
8	Then I have a break for a couple of hours. In that time, I like to go to the library, we have an online book, and so that is the best time to... it is quiet there is no distraction; I like to get my things done. So, when I am on campus, I like to get ahead on work that I know it is coming up.	0	B
9	I did not quite understand of math concepts, and we were having a test on it so I went up to math lab and requested some help, as they were able to break it down and show me exactly how to do the process.	6	A
5	It is hard because if I had to sit down with a list, I probably left some things out. I am just busy. Like yesterday I meal prepped for myself so that way I have healthy options ready. I go up to the library to the health professionals' room because it is usually quiet there. There is usually nobody in there, which is great for me.	14	B-
6	Well, I decided I am going to start preparing a day earlier, like every week put some time aside. I learned how to take pictures of like the specimens under a microscope, I am taking pictures of them on my phone and printing them out and putting them on my dashboard, so I am seeing the same exact specimen again.	0	A

Supportive people, resources, and programs. The theme of support formed the greatest cluster of coded segments in the interviews. Most of the students interviewed were aware of tutoring of some type on campus. The type of tutoring often depended on their class load, whether they were taking math or writing based courses, or if they needed help in a specific class. Students were able to connect with supportive resources easily and could identify where to go

through various programs if they needed help. Table 10 aggregates the codes relating to supportive people and resources, including on-campus support from tutors, professors, advisors, and library staff along with off-campus services, peers, and friends. The chart identifies how codes were defined and the number of students mentioning the code.

Table 9

Major Theme 2 Support

Presence in coded segments	Code	Location on or off campus	Code Type-Definition	Number of interviews where the code was present
35%	Tutor	On	Semantic- use of tutoring or reference to an actual tutor	11/12 students
19.9%	Professor	On	Semantic- teacher, instructor, professor mentioned	10/12 students
5.2%	Advisors	On	Semantic- mention of advisor support	6/12 students
3.8%	Library	On	Semantic- use the library for study space or spend leisure time	6/12 students
27.9 %	Services	Off	Semantic- day care, grants that help to support students	11/12 students
15.1%	Peers	Off	Semantic- references to classmates or other students in college	10/12 students
12.9%	Friends	Off	Semantic- used to designate closer	10/12 students

Tutor support. Table 11 provides student statements regarding how tutors provide support for academic. Tutoring took place face-to-face on campus. Students accessed both grant-based tutoring services and academic support service through PERKS.

Table 10

Tutor Support

Student	Statement	Times attended PERKS Tutoring	Final Grade
6	They [PERKS tutors] came into our health class and they run tutoring sessions through there but I am generally pretty sound in that class, so I do not really use them.	0	A
12	If I need access to tutors I'm in the trio Quest program so I can just go upstairs to the library and go to the trio Quest lab have access to a tutor anytime I need to or to go to the center, and they have English tutors there too.	0	C+
9	They came into our first or second classes. We have the Perks Program for both Biology and Health and tend to go to the sessions during the week, during lunchtime, in between classes as well.	6	A-
5	She [the tutor] did say that we could reach her, that we can communicate and reach her through there [CollegeQorps], but I do not like... that's pretty much it.	14	B-

How tutors help. One student who reported having social anxiety said she had found support on the CollegeQorps platform from other students; however, those posts were not found on the system records. Most students were aware of PERKS tutoring services on campus, and two could explain how CollegeQorps was supposed to help them academically; others were not sure what the purpose of the program was. Students saw professional tutor programmatic support

through the Math lab and Trio as comforting, students sought advice, trusted these professionals to offer guidance, and lend their experience to help student face challenging academic situations, breaking down more difficult tasks into doable steps. Table 12 aligns student statements with tutoring attendance and final grades.

Table 11

How Tutors Help

Student	Statement	Times attended tutoring	Final Grade
5	So, I'll go over things with her, and she can sometimes identify without feeling like she has been in that situation before, or she'll give us some tips and advice about how we might be able to handle the situation that we are having.	14	B-
7	With the math, it is extremely helpful. With the digital electronics, tutoring. In math basically it's the XYZ program, and I just logged on to the online, and the teacher (TRiO Tutor) and I sit there, and we go through the homework, and she sits there, and she watches me run the formulas, and she'll catch me when I'm making mistakes but if I don't understand something she's right there to explain it and she's very good at it,	6	B
9	I did not quite understand of math concepts, and we were having a test on it, so I went up to math lab and requested some help, as they were able to break it down and show me exactly how to do the process. So, I was able to get it and understand it.	6	A-

Lack of tutor use. Other students did not feel the need to use tutoring services and felt they were doing well on their own. Tutor use did show a marginal impact in that those students who were interviewed that did not attend tutoring had final grades ranging from C+ to A, whereas those who did attend tutoring ranging from B-to A- on their final grades. Students who did not seek out tutoring saw their professors as a better support option and did not trust their peers to provide academic assistance. Some students felt academically sound and did not feel comfortable asking

peers for assistance with academic issues. Other students contributed their academic success to being placed in the *right classes*, illustrating an external locus of control regarding their academic success. Table 13 provides supporting statements regarding lack of tutor use.

Table 12

Lack of Tutor Use

Student	Statement	Times attended PERKS	Final grade
8	I think that if I wanted a clarification on something, I would rather address the professor just to make sure that is what they really wanted. Because if I need clarification, other people might need clarification as well. I would definitely, this is something that I want to be here doing, so I would go, and I would get that extra help as needed, tutoring, talk to the professor, work with other people in the class if I thought that I really needed that because I have not had to utilize anything like that. So far, everything has been easy maybe I just got the right classes.	0	B
6	They [tutors] came into our health class, and they run tutoring sessions through there, but I am generally pretty sound in that class, so I do not really use them. Interviewer: Is there a particular person that you talk to when you are struggling, when realize you need help about something who would be the first person that you would think to talk to about needing help? If I cannot find out on my own, I go to the professor during office hours they are accessible.	0	A-
9	I tend to find that, and I do not mean to sound terrible, but I tend to do better academically than they do, so I am more apprehensive about asking them [peers] questions about schoolwork.	6	A

Professor Support. Contacting professors regarding class concerns involved face-to-face interactions, syllabus information, websites, emails, and texting. Students preferred face-to-face

interactions when situations involved communication that is more personal, such as receiving a poor grade, or difficulty in completing a class assignment. Syllabi provided specific contact information for each instructor, but students felt that a more comprehensive system of communication would be helpful. Table 14 provides student statements related to professor support, instructor Blackboard posts, and kudos given in the Starfish Retention system.

Table 13

Professor Support

Student	Statement	Instructor Blackboard posts	Kudos
12	My math teacher she gave us her phone number so we could text her or email her on her homework website or we can email any of the teachers. The math teacher told us the first day, she had everything like on the syllabus, and most of the syllabuses for the classes tell you the best way to contact them.	0	0
11	If I did not go to the advisor, I would probably go to the teacher; I would go to the office hours and talk them about it, to see what I could do to improve my grades.	0	0
7	Yeah, I'll go face to face, it's much better if I go that way and if I don't understand it with one teacher, I'll find another teacher or I'll go find one student, and it's face to face.	12	0
8	I actually have anti-anxiety medicine and prescribed so I, but it was a lot of just trying to talk myself through the experience, and I did talk to the teacher asked if I could go last on that day, watch the other people go first.	0	4

Balancing personal needs with academic pursuit. Whether traditional or returning adult, students had busy lives balancing their personal lives with academic pursuits. Traditional students balanced their family and work roles with the support of parents and grandparents, whereas adult students were supporting their families along with academics. Table 15 shows the

percentage of coded segments related to responsibilities such as child/family care, planning leisure time, time management, using services, maintaining employment and self-care.

Table 14

Balancing Personal Needs with Academic Pursuit in Community College

Presence in coded segments	Code	Code Type-Definition	Number of interviews Where the code was present
11.6%	Responsibilities	Latent- necessary tasks completed by the student in class and life	10/12 students
11.1%	Child care	Semantic-care for preschool children	5/12 students
6.1%	Use of leisure time	Semantic- free time, time outside of class	7/12 students
5.7%	Time management	Semantic- planning and keeping track of classes and activities outside of school	5/12 students
5.7%	Services	Latent- day care, grant based programs, financial aid	6/12 students
3.8%	Work	Semantic- paid activities at college or in the community	5/12 students
3.8%	Self-care (meals, exercise, food)	Semantic- sleep, shower, food prep, exercise etc.	6/12 students
6%	Family Care (children, spouse, grandparent)	Semantic- care provided by student for school-aged children, spouses or grandparents	2/12 students

Campus services. Many adult students were dependent on services such as day-care to maintain their student status. Students supporting school-aged children were sometimes splitting their day between college and home with multiple trips back and forth from to support homework, meals, and bedtimes. Programs that bought textbooks and paid for travel or purchased uniforms

helped these students stay in college. Table 16 provides examples of student statements related to using campus services.

Table 15

Campus Services

Student	Statement
5	And I am on campus a lot I take advantage of my services STEM related classes.,the program that I'm in pays for my son to go to the daycare there, so rather than going home and not having daycare, I got to campus put him on the in the daycare so I can focus on my studies, It is the medical professions grant. It is a grant for medical professions, it is a random lottery assignment, and I was lucky enough to get into it. They help me pay for my books, my uniforms, my scrubs, shoes; they pay mileage to and from school.
6	I learned about the program when they came to my class. I thought it was full, but I applied and got accepted. They help students in STEM-related classes.

Responsibilities. Many of the urban students and rural students were taking five to six classes during the semester and saw that as their primary responsibility. The urban group participated in mentoring and on-campus internships, whereas the rural students varied in relation to their role; adult students had jobs, and family responsibilities and were scheduled heavily throughout the day, traditional and high school students had jobs, but relied on family for meals and expenses. Most students mentioned using the library area for a quiet study space between classes to keep up with their studies.

In some cases, having too much responsibility resulted in academic problems. Some students who had mentored or tutored themselves stopped doing so to maintain their grades. One student exacerbated academic problems by refusing to deal with an issue: social anxiety prevented a student from presenting in class and as a result, did not do the presentation. The student rationalized this choice by meeting with the instructor and finding out how much the missed assignment would count in the overall grading for the class.

Family issues. Overall the responsibilities of the students were considered primarily academic, but life circumstances sometimes interfered with getting extra help in any format, in person or online. These responsibilities consumed student lives and reduced the use of a social media site for academic reasons. Table 17 provides examples of student statements related to family issues.

Table 16

Family Issues

Student	Statement
7	I have to drop my wife off at work then I leave here sometime around 5, I pick up my wife at 5:30 and we go home, eat, and go to bed. That is it.
9	I will start preparing dinner for my children, I will clean up from dinner do regular chores around the house, get them all showered and into bed and then I will study

How community college students access and use technology. Community college students interact with technology in many ways. While online resources and smartphones have always surrounded traditional students, returning adult students may have had to adjust to these forms of communication throughout their lives and had to learn how to use the new format. College life places new technology demands on students through learning management systems, software, and classroom applications. College communication occurs through college emails and for students who opt into the system, push in text notifications. These notifications typically share policy information and scheduled events. Students reported using a laptop computer, tablets, and their smartphones to access college emails and resources, such as Blackboard and Power campus. Table 18 presents the major codes related to students accessing and using technology, preferred devices and contact modes, virtual communities, and the limitations in using technology.

Table 17

How Students Access and Use Technology

Presence in coded segments	Code	Code Type- Definition	Number of interviews where the code was present
21.1%	Technology	Semantic- devices or web related resources	8/12 students
13.9%	Email as a primary academic communication device	Semantic- email is main form of communication	6/12 students
12%	Phone as a primary personal communication devise	Semantic- a phone is the main device used for communication	8/12 students
13.9%	CollegeQorps	Semantic- social media platform offered as a communication vehicle for students	6/12 students
10.1%	Easy to use	Semantic- no problems using a device or software	9/12 students
7.2%	Facebook	Semantic- popular social media platform	6/12 students
6.7	Limitations to use	Latent- difficulties students faced in using technology, programs, or social media	4/12 students
5.7	Blackboard	Semantic- Learning management system used for academic communication	4/12

How community college students view technology use. College students must become familiar with communication protocols in college. While most students adapted to college technology easily, two students mentioned the difficulty in accessing services due to being new to the college process, and not knowing what was available, but reported that their skills improved over the semester. One student had both connectivity issues and difficulty with keyboarding due to limited mobility. As to whether a student would contact a college service face-to-face or via the internet depended on the situation and which option seemed easier at the time. No students

interviewed posted or emailed on BlackBoard. Table 19 provides examples of student statements regarding their view on technology and their activity on Blackboard LMS.

Table 18

How Community College Students View Technology Use

Student	Statement	Student Blackboard Posts
11	I like that all my teachers pretty much have some sort of way for me to contact them whenever I need something. Like my math teacher is more likely to look at her phone than her email, and my early childhood education teacher is more likely to look at her email than anything else	0
7	I do all my work on campus, I don't have a good internet connection at home, and so it's hard for me to get online, and I don't have a printer at home ... I would download it onto a flash drive, most of my work is done on campus. The phone line I either have to use data or Wi-Fi, but as long as I can get online I can access Blackboard, and at least get my assignments, and I might not be able to do all the presentations and the teacher puts	0
6	Other than those resources from like the library or emailing a professor, I will usually just do that online. So, I guess it's like a mixture of both [in person and online], it depends on what I need to do.	0

Students were overwhelmed with the variety of communication paths used, and several agreed that a combined platform that contained the information found in Blackboard, Power Campus, Starfish, and a student-to-student platform would improve communication on campus. Students believed that remote communication would be helpful, but they lacked a structure in how to communicate best on and off campus. Overall, students are comfortable using technology to communicate but experience barriers in the current communication infrastructure on campus.

Contact mode preferences. Most institutions have systems and preferences for setting up their communication systems. Streamlining communication methods and protocols provides structure for the host (Paxhia, 2011). In a community college situation, assigned student emails

are the preferred communication pathway for college information. However, many students do not buy into the system, and never check their college emails, or do so infrequently as is evidenced by the lack of student-generated posts found on the campus Blackboard site. From a students' perspective, student emails are a limited source of information. Students may already have primary communication preferences based on their needs as parents, business owners, or caretakers; and while it is easy enough to align a student email with a server of choice, not all students will. Sending a student an email may be useless if they do not check the campus email, but texting them provides another option for communication. Mandating communication pathways with students does not assure they will communicate with college staff or amongst their classmates. Table 20 aligns student statements regarding their contact mode preferences and the activity on the VLC.

Table 19

Contact Mode Preferences

Student	Statement	Virtual learning community activity
6	The only thing that concerns me with it is that there are already so many different College resources, I guess you could say, in place, that we already have to go through, that it kind of adds another one on and that's...	1
7	It would be nice if they could get them all combined As far as contacting the fellow student, if I don't have their student email address, I think pretty much College-wide, a thing called Blackboard and you got a place on blackboard where your classmates are posted there and if they're using Blackboard like they're supposed to they're supposed to see that they have a personal message but that doesn't always work because not everybody uses Blackboard	2
12	I think it would be like if you could just open up on your phone your teacher's email addresses or whatever with whatever form they wanted to be contacted by there is	4

like a list of it instead of going back and looking at all of the syllabuses to get all the contact information.

11	I'll check Blackboard a lot, I'll check Power Campus, I'll check the CollegeQorps, like when there is another session, or if any of my grades went up.	8
9	I mean I go through the school I have the Blackboard and starfish through our campus and then emails	1

Face-to-face communication. Three of the students who used tutoring preferred face-to-face sessions but said if there was a chat function for quick questions, they might use that as a support. Some students that were connected to a grant-based services like CSTEP, a program to support science, technology, entry program, or TRiO, a group of grants to support low income, first-generation students, reported being at ease using face-to-face tutoring supports offered through these programs, while others did not attend supplemental PERKS tutoring at all. Table 21 compiles statements regarding face-to-face communication, affiliation with support programs, and tutor attendance.

Table 20

Face-to-Face Communication

Student	Statement	Support program	Times attended PERKS
2	The most optimal thing would be like face to face communication, like working things out within that element and like texting and using the phones and email is good for when you don't have that availability as far as being face to face	Urban Student	NA
6	So I think that would be a lot easier to like have a platform with all the students, so if you wanted to reach out to everyone, hey we are going to form this study group to study for that thing is anybody interested. I think that that would be something that would be very useful.	CSTEP	0

9	Face to face, she's in the trio lab, and I go there almost every day because it's generally quieter there and so I'll just fly by, or I'll be like "can I talk to you real quick?" and she's like "yeah sure, come on in."	TRiO	0
5	There is one specific tutor that works specifically with a nursing student, REDACTED I think it is, she is really good. She sat with me, and she read my paper, and we worked on its together	TRiO	14

Primary communication preferences: Email and phone. Most students interviewed mentioned email and phones as a primary communication method. Tutors sent our reminders for PERKS sessions on a weekly basis; however, students did not communicate with their tutors through email at all on Blackboard. Some students did not feel the need to communicate with tutors outside of the tutoring sessions. Table 22 shows students primary communication preferences.

Table 21

Primary Communication Preferences

Student	Statement
5	<p><i>Interviewer: So how do you communicate with the tutor?</i></p> <p>If I wanted to, I would probably send her an email through Blackboard.</p> <p><i>Interviewer: So, you haven't been communicating with her online?</i></p> <p>No. No, I have not needed to. I just show up for the things, for the tutoring sessions.</p>
1	I get chemistry emails about internships, events that are relevant to us and so on.
11	<p>I use Blackboard the most because I can go back and if I miss something, or if I miss class that day, I can see what we did, I can email my professor or message them on there if I need help with anything</p> <p>She [the tutor] was sending the emails through Blackboard, and that was just easier for her.</p>
12	I got an email from one of my teachers that my next class is canceled. My math teacher she gave us her phone number so we could text her or email her on her homework website or we can email any of the teachers. My math teacher is more likely to look at her phone than her email, and my early

7	childhood education teacher is more likely to look at her email than anything else. I really did not see the email she sent the night before, and I did not see it until 2 hours before the class. As far as contacting the fellow student, I don't have their student email address
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Most of the students interviewed specifically mentioned using their phone for communication. Having a phone served as a bridge between face-to-face opportunities and online access to resources. Several students showed interest in receiving push-in notifications for class information and cancellations. Table 23 shows student device preferences, consisting of phones, emails, and tablets for using technology for their academic work.

Table 22

Device Preferences

Student	Statement
9	<i>Interviewer: Do you ever use your phone your mobile phone for school related?</i> Yes ma'am. <i>Interviewer: What kind of things do you use your phone for?</i> Generally checking school emails, looking up the Power campus, and my grades and things of that nature because it's usually quicker. If it's more in-depth, I will use the actual computer.
2	Phones and email are good for when you don't have that availability as far as being face to face. So, it serves a good purpose when you have other obligations in your life, and you still want to be equally productive and participating.
5	Through my phone. I tried to do a lot on there. I usually use my computer for typing.
12	I think it would be like if you could just open up on your phone your teacher's email addresses or whatever with whatever form they wanted to be contacted by there is like a list of it instead of going back and looking at all of the syllabuses to get all the contact information.
11	Through my phone. I added it to my home screen on my iPhone, so it's not an app, but she showed us how to bookmark it on a home screen on an iPhone, so I just made it an app, and I can access it there.
7	Well I have to be able to get online with my phone, it won't do it over the phone line I either have to use data or Wi-Fi, but as long as I can get online I can access Blackboard and at least get my assignment

Actual student use of technology. Students know how to use technology and are at ease doing so. Seven of the eight students mentioned either checking or receiving email in their student email account. Emailing within the Blackboard platform allowed direct connections to instructors and students in their class and section. The PERKS program added tutors to the Blackboard rosters to make it easier for tutors to contact students and for students to seek out the tutor through the platform. Meeting with instructors also made the class resources and assignments readily available to the tutor. Students mentioned contacting tutors via email; however, these posts did not exist. Table 24 aligns students statements regarding technology use and information gathered during observations.

Table 23

Actual Use of Technology

Student	Statements regarding the use of technology	Observations
5	PREP-U is a... it goes with our Textbook I know that. So, you log in and then you answer a series of questions, <i>Interviewer: Okay so this is prep for the NCLEX exams, so this is related to nursing?</i> It also helps a lot with just the exams that we take in class because they are very much, a lot of the questions are formatted the same way.	Lack of student interaction and questions, reliant on topic review
6	<i>Interviewer: And how did the group come together?</i> Well, I was actually reached out to by two different people or by two different groups over on in person and over social media and then we kind of just banded together both groups. <i>Interviewer: The person who to you via social media, which social media account was that. Snapchat.</i>	No PERKS attendance
8	<i>Interviewer: Okay. Tell me about the last time you used the internet for something school related.</i> I was working on a project that I am doing with another student on the chemistry of addiction, so I was looking up different websites, pictures to use for slides.	No PERKS attendance
9	<i>Interviewer: What kind of things do you use your phone for?</i> Generally checking school emails, looking up the Power Campus, and my grades and things of that nature because	Attended PERKS 6 times

It is usually quicker. If it's more in-depth, I will use the actual computer.

Although all students had access to the internet, some lacked connectivity and access to printers at home and relied on using computers only when they were on campus. Several students mentioned they used social media for personal communication, therefore it was easy to expand its' use to connect with other students on Facebook and Snapchat. Freshmen-nursing students set up a Facebook group under the recommendation of upper-level nursing students, to communicate and ask questions. This student noted that the last time the Facebook group was used it was to coordinate the purchase of shirts for the nursing students as part of the nursing club. Even with knowledge of how to navigate social media successfully students mentioned having trouble signing on to CollegeQorps. Tutors assisted students to log on to CollegeQorps; however, students considered this more work and found it easier to use Blackboard, because they were already set up in that program.

Students relied on Blackboard as the primary communication platform for their classes. Access to assignments, resources, and, in some cases grades was centralized in Blackboard, making it easier for the students to get what they needed in one location. Blackboard also allowed them to contact their instructor quickly. Another student pointed out that students had access to Blackboard immediately and some already had experience using the LMS for previous classes. It took a couple of weeks to get students informed, registered, and active on the CollegeQorps site. Students have formed their communication during the first weeks of class and were comfortable using Blackboard to keep in touch with tutors, instructors, and resources. One student mentioned access issues using their smartphones to use Blackboard and Power-Campus and reported they had to use Safari on their laptop to get to these sites.

Technology services students want. Community colleges serve a diverse student population, with many students commuting to campus. While the college has communication channels to disseminate information to students, communication among students could be better. Supporting the need for student feedback, associated behaviors, and cognitive growth aligns with Bandura's Social Cognitive theory that "posits triadic reciprocal causation" (Kim et al. 2015, p. 293) Although Blackboard fills the communication needs within a class; it does not allow students' access to the entire student population and benefit from that social network. Starfish is another attempt to improve faculty and advisor communications with students and provide retention services but stops short in providing student-to-student communication. If these systems could facilitate student interaction, that would simplify the process and improve communication on campus; however, that is not the designed functionality of those programs.

Social Media Roles in Academics. Several students within the study had trouble in registering on to the social media site: Lost passwords and emails confounded the relatively straightforward process, creating frustration and low use of the platform. Those who successfully registered on the web site were unsure of how they were supposed to use the site to support their classwork. The social impact of the platform was also limited to students in targeted classes, restricting students to only contacting those students in their classes. Several students reported that they used social media with their friends but did not consider classmates to be friends, and did not communicate with those students outside of class.

Self-imposed social isolation. Several students communicated that they did not have, or seek out friends on campus, or actively chose to isolate themselves to focus on their schoolwork. These same students reported frequently visiting online platforms to view grades, keeping up with coursework, or checking to see what instructors or peers had posted. The reality is that few

students posted on college-sponsored platforms, so informal conversation did not take place.

Students could see their grades and check instructor communications. Some students referred to themselves as loners, out of towners, and self-directed learners all terms that denote isolation.

Going to college was like working at a job: students showed up, do their work, and then get on with their life. Melding the demands of a college with an outside existence was not portrayed in the student interviews; students led very separate lives at college and home. Table 25 depicts student statements that indicate feeling isolated or alone.

Table 24

Self-imposed Social Isolation

Student	Statement
11	I'll check Blackboard a lot, I'll check Power Campus, I'll check the CollegeQorps, I'll do... mostly I'll just check and see if there are any course messages, like when there is another session, or if any of my grades went up. I check that a lot, I keep on top of that.
5	I don't really have friends here. I don't know I don't really hang a lot at school. Friday's when I'm there in the morning they have class, so I go up to the library to the health professionals room because it's usually quiet there. Only the health students can go in there, and there is usually nobody in there, which is great for me.
7	Well in my experience because I don't really communicate, I'm kind of a loner anyway, for one thing, I'm a different age group completely than the other kids.
8	I think they work very well, but I'm a little bit more self-directed, I'm not somebody who needs to have my hand held, you know remind me to be focused.

Those students who saw online social media as a positive way to communicate wanted to focus on networking with other students. While some said they could contact the tutor through CollegeQorps, they did not see a personal need for tutoring or said they would probably use Blackboard. Traditional college students were more likely to use an external social media site such as Facebook, or Instagram to make initial contacts with classmates and then follow up with face-to-face study sessions. Although nursing students had a group Facebook page, the students commented that it was more for social use rather than academic use.

Communication, socialization, methods, and preferences. The overall concept of communication reflected several coded segments including, social interactions, preferences for face-to-face communication with instructors, the acceptance of student emails as a way to connect with classmates, receipt of notifications of the class curriculum, or schedule changes. An underlying sense of loneliness and isolation permeates the interviews as students chose to work alone or avoid connecting with other students. Technology and communication emerged as

separate themes due to the volume of codes assigned. Table 26 reports the percentage of coded statements related to social interaction.

Table 25

Social Interaction Aspects of College Students

Presence in coded segments	Code	Code Type- Definition	Number of interviews where the code was present
16.6%	Social	Latent- interactions with others	9/12 students
11.8	Facebook	Semantic	5/12 students
9.9%	Communication	Latent- face-to-face, email, or social media interaction	5/12 students
9.5%	Isolation	Latent- deliberate attempts to avoid others	5/12 students
6.1%	Face to face	Latent- person to person interactions	8/12 students

Social aspects of college students. Social aspects of communication constituted the largest amount of codes within the transcripts and appeared in nine of the twelve student transcripts. Students indicated that socialization among classmates was limited or used for a specific purpose, such as networking. Difficulties in socialization were apparent with students relating fear, social anxiety, and isolation in public settings. Although students said they might seek out an instructor or classmates, they chose to separate themselves and remain isolated in the crowd at college.

Communicating with instructors was extremely important for the students in this study. Six of the eight students interviewed at the rural community college specifically mentioned that instructors had provided useful information in face-to-face meetings that made connecting with academic support more natural and beneficial. Table 27 provides student statements regarding socialization.

Table 26

Social Aspects of College Students

Student	Statement
5	Periodically we would socialize. For me, I would want to network with my other nursing students because it is such an intense program, I feel like we are all in it together and we need the support of each other.
7	<i>Interviewer: Do you communicate outside of campus with any other students on campus?</i> Outside of school? My social life is horrible outside of school, that's basically why I started coming to school. I was disabled and at home in a town, that has nothing, absolutely nothing.
12	I am from a different town. <i>Interviewer: Okay, all right, but do you think that is impacting your experience at school not having people to talk to.</i> I do not know I do not really hang a lot at school. <i>Interviewer: How would you rate how you feel about being at school?</i> I usually go to either Books and Bytes or the union center cuz I have a meal plan, and I'll get food or drink there, and I'll sit and use my laptop.
6	<i>Interviewer: Is there a particular person that you talk to when you are struggling?</i> If I cannot find out on my own I go to the professor during office hours they are pretty accessible. <i>Interviewer: Anybody besides the professors?</i> For the two Sciences I do, the rest of the classes I am pretty good on my own. So, I kind of just do my own thing it works out fine, but for my two science classes, I formed relationships with some of the students so we can help each other out. <i>Interviewer: You think it helped a little bit?</i> Yeah, I think if we got together sooner it would have been a lot more effective.

Communication within the college system occurred in several ways. Students needed to interact with different information systems to get a comprehensive outlook of their standing in classes.

- student emails as a primary source for college staff and faculty to connect with students
- some instructors provide resources and course content through Blackboard
- grades are delivered through Power Campus
- Starfish has been recently implemented as a retention system,
- syllabi contain instructor contact methods
 - with some using web pages, texting, office hours, or off campus emails,

- some students prefer texting or social media as their primary contact mode.

Students wind up juggling multiple pathways of communications for each course they take.

Off-campus communication. When students described their communication with classmates outside of campus, several students indicated they generally do not communicate with classmates outside of class even though they were aware of methods to connect such as Blackboard or student email. Other communication barriers involved family obligations, work schedules, or a desire to remain isolated. Even when students reported how important it was to communicate, they focused on face-to-face communication rather than electronic methods. Table 28 consists of student statements regarding how they communicate with others when they are off campus, their cohort group, and gender.

Table 27

Off-Campus Communication

Student	Statement	Cohort	Gender
7	<i>Interviewer: Now do you study with others or do you study alone?</i> I do most of my studying alone. I do... Like we had a digital, midterm, today, I sat down with three of the students in my class, and we studied the day before for like 2 hours. <i>Interviewer: And did you find that helpful?</i> Oh yeah, yeah it helped a lot.	Older adult rural	M
9	<i>Interviewer: And so do you have classmates that you socialize with, talk to on or off campus about school issues?</i> Not really. There is like a couple of younger students in my biology class, but if they have questions they'll ask me and I'll help them with that, but otherwise no.	Adult rural	F
6	<i>Interviewer: Once formed did you have discussion groups in social media or where all of your study sessions face-to-face?</i> All of our study sessions between everyone were face to face. <i>Interviewer: And how many did you have?</i> We had like 7.	Traditional rural	F
6	<i>Interviewer: When you communicate what channels?</i> Sometimes we will talk like during, right before, or after class and set things up and if we're not in class it's usually social media or if it's a person I know in the dorms I might go to the door or text	Traditional rural	F
7	<i>Interviewer: Do you communicate with the tutors using Blackboard?</i> Nope, no I don't. Everything I need to know is posted on Blackboard by the teacher.	Older adult rural	M

Even though some students reported they had little communication on campus and saw remote communication through email and text as an opportunity to connect, they reported finding communicating through technology undesirable. Investing in other classmates was seen as risky, some students worried that if they did not understand a concept on their own, neither would others; these students preferred to ask for clarification from the instructor directly, in person, rather than a classmate online.

Social media communication. Establishing an online communication tool was a primary focus of this study. Students had the opportunity to ask questions or respond to tutor posts in both

Blackboard and CollegeQorps. Tutors encouraged students to participate by asking questions; however, the primary focus of these posts became reminders of upcoming tutor sessions.

Students in the study were familiar with Facebook and used the app for personal communication. The student nurse group formed a Facebook group to support one another. Original posts collected during the period of the study during the fall 2017 semester were coded for nature of the content resulting in 37% of the posts were academic, 27% of the posts were social, the remainder focused on schedule issues such as school closures and grades being posted on Blackboard.

All interviewed students had made at least one visit to the CollegeQorps site as part of the study. While students registered and even followed up with logging on, no content posts occurred. Students were not interactive with the available communication platforms. No students responded to tutor emails in Blackboard. Those students who did post on CollegeQorps were primarily for registration with no follow-up content posts. Table 29 aligns student statements with their activity on virtual communities and their content.

Table 28

Social Media Communication

Student	Statement	Social Media posts (Facebook or CollegeQorps)	Content of social media posts
student 9	<i>Interviewer: Okay. And would it have made any difference if they were using Facebook or some other social media to try to communicate, do you would have used it more? If there were like an instant messaging type of thing I would have used it more, but otherwise, probably it would have been about the same.</i>	CQ- 1 log ons	Registration only
student 11	<i>Interviewer: But do you ever use like Facebook, Instagram, Snapchat, or any of those for anything school related. No.</i>	CQ -8 log ons	Registration only no content posts
student 10	<i>Interviewer: Do you ever use social media for school related for something school related? Like Facebook or Twitter?</i> Not really, not for school purposes	CQ- 2 log ons	Registration only no content posts
student 8	<i>Interviewer: And do you ever use social media for anything school-related? Like Facebook, not really, I just that's kind of I don't have anybody on my Facebook that's going to my school.</i>	CQ- 5 log ons	Registration only no content posts

One student did try to establish a learning community within the electrical technology group, a student who was interviewed saw those postings on the CollegeQorps site as inept or artificial. “I mean there's only one person in my class that I know that's been posting messages and the thing is that she's got questions about everything and nobody answers them. She's a smart girl, I actually tutored with her, and she's smart, as a matter of fact in many ways she's smarter than me, is just that I can't handle all these stupid questions, you know, think about it girl, c'mon!”

Within the 19 class sections, only three student posts occurred, the students did not communicate on CollegeQorps or use student emails on the Blackboard system even though they espoused this as a communication route.

Loneliness and isolation. Some of the student interviews provided evidence of self-imposed isolation, resulting in loneliness within the college setting, and a solitary existence while on campus. Students wanted to study in quiet places, undisturbed by other students. Even leisure time consisted of solitary activities like playing games on their phone, listening to music, or reading. Students reported studying and doing homework alone rather than with classmates. Student 5 presents a different social interaction demeanor; she self-identifies as very busy but feels very connected socially, indicating a need for finding a quiet space to keep up with life's demands. Whereas the remaining students in this theme feel disconnected socially and failed to connect with classmates. Table 30 aligns student statements that reflect loneliness and isolation, with attendance at tutoring sessions and being active in the VLC.

Table 29

Loneliness and Isolation

Student	Statement	Attend tutoring	Log on CollegeQorps
5	Friday's when I'm there in the morning they have class so I go up to the library to the health professionals room because it's usually quiet there. Only the health students can go in there, and there is usually nobody in there which is great for me.	14	1
12	I don't know I don't really hang a lot at school. I don't really have friends here. I have homework I will finish my homework then. If not, I'll just listen to music on my laptop, read...	0	4

Isolation. Students self-isolated for different reasons. While student 7 admits that communication is a difficult aspect of life, Student 8 sees her isolation as self-reliance, a strength that separates those who actively take part in academic opportunities from those who do not. Table 31 aligns students' statements of isolation with PERKS attendance and CQ log on activity.

Table 30

Isolation

Student	Statement	Attend PERKS	Log on CollegeQorps
7	Well in my experience because I don't really communicate, I'm kind of a loner anyway,	7	2
8	I think they work very well, but I'm a little bit more self-directed as a student, I'm not somebody who needs to have my hand held, you know remind me to be focused. I think that people go there with good intentions, but when I go in on Mondays and Wednesdays, and it might just be the days and the times, it doesn't seem like it's utilized a whole lot.	0	0

Technology-based communication: Contact modes. Students encountered a variety of contact methods among the instructors: The syllabi were the main resource for contact information. A student with a typical load of five classes might need to contact their professor via email, texting, office hours, Blackboard, or speak in person after class depending on the instructor preferences. Those students who were not comfortable using a tutor mentioned going to the professor's office hours but admitted they had not done so. When asked how they knew to contact a tutor or instructor, most students cited an advisor, orientation information, and even relying on what they had done in high school and applying that behavior over to the college setting. Table 32 aligns student statements regarding using technology to communicate when they are away from campus, with their cohort group and gender.

Table 31

Technology-based communication

Student	Statement	Cohort	Gender
5	If the campus is being closed, then you get a text message. If class is canceled usually, I get an email through the professor some professors will send an email and it will hit my Gmail and it will pop up.	Adult rural	F
5	<i>Interviewer: If there were ways remotely that you can stay connected to your classmates that would be useful for you, that if all that was in one place?</i> Yes.	Adult rural	F
2	<i>Interviewer: primarily you communicate via text and email with your classmates?</i> Yes. Phones and email are good for when you don't have that availability as far as being face to face.	Traditional urban	NA
11	I would probably text them and say that I wasn't gonna be there and what did I miss or if I had any problems	Traditional rural	F

Social media. Social media served as a way for some students to connect with classmates. Some students limited social media to the friends and family off-campus, and others disliked using popular social networking sites for all purposes. Those students who used Facebook, Instagram, or Snapchat before coming to college were at ease with that format and thought that those mediums would work for contacting classmates. Only the student-nursing group used social media for academic purposes, posing questions or resources on the group page. Students who used social media to contact classmates reported that not everyone is using a specific site, requiring multiple postings to contact students on various sites. Blackboard did provide access to students in the same classes, but limited communication across disciplines. Table 33 ties student statements regarding social media use with their cohort group and gender.

Table 32

Social Media Use by Community College Students

Student	Statement	Age Group	Gender
7	Facebook and that is their only social interaction, and that is not good. I do not have an emoji on my forehead.	Older adult rural	M
6	I mean I don't really think so because the way we are doing it now works pretty well, and we have it condensed, and most of the people I talk to for like study groups which they have on the websites, we have over Snapchat, so we create like a little group chat, and it's actually very effective I believe. If they were all on that website I think I would try it, but I'm not sure that all of them actually even know what it is.	Traditional rural	F
5	Because I think people use, well I know myself, and I log into Facebook way more than I log into Blackboard, and it was actually recommended by a second-year student, and she said that they had done it, and I said that's a great idea. I use Facebook more than I use Instagram; I am more interactive on Facebook than I am on Instagram.	Adult rural	F

CollegeQorps feedback. CollegeQorps provided a virtual learning space for a selected group of students. Student participation was limited to initial registrations and produced few interactive posts within the group. Although having a platform to reach out to tutors appealed to students, they did not engage in CollegeQorps for this purpose. Students continued to seek out their tutors in face-to-face sessions even though they could contact them through CollegeQorps. Table 34 presents the student statement regarding their experience in using CollegeQorps as a VLC.

Table 33

CollegeQorps Feedback

Student	Statement
7	But I had a hard time, and I can't get on... I cannot even remember my password or nothing now, because I do not use it, because it's a pain in the neck to get on. Yeah, CollegeQorps, what is the purpose here? <i>Well, that is another question; did you understand why you were asked to use it? Or why you were invited to it?</i> Not really Other than maybe a tutoring aid? Maybe? I really do not understand the purpose of it.
11	I think it was only just my email and I had to create a password. I think I had to sign in with my FM stuff and then make my own password and username and it wasn't hard to do. I think it's because it's only for one specific thing, like with other apps I can check everything at once, but with CollegeQorps I can only, I am in a group for Education, so if I have to check a class for History it won't be in there, so I have to go to a different app. Like Blackboard,
5	I do not have a clue what I am supposed to do. I did not see a lot of posts or anything like that... I did not know what it was for, to me it was, it felt like it was a little unuser-friendly. You know there wasn't like any threads like I said I really didn't know the purpose of me being on there was, what am I supposed to do on there? If other people were on there and there was like interaction going on, I think yes, if there was some post this were requiring you to engage, I didn't really feel that there were any areas for me to engage in.

Ease of use and limitations: CollegeQorps. The process itself was simple, but students were not sure how to use the platform, had difficulty with managing an additional communication path, and with the lack of participation caused them to disengage. Tutors provided instruction in using the platform, which increased logging on in the early childhood classes; however, student-nurses resisted using the CollegeQorps since they had already established a closed group on Facebook. Since CollegeQorps was only used in some classes students were limited in whom they could connect with, requiring them to follow up through other means. Table 35 and 35a reports the students' ease of use and limitations with the CollegeQorps platform.

Table 34

Ease of Use and Limitations: CollegeQorps

Student	Ease of use statement
5	I just recently signed up for that, and the signup process is easy
8	I was able to figure out, it was not hard, it's like any kind of social media, you click on what buttons and just look around.
12	I am pretty sure they were, I think it was a really easy process.
11	I added it to my home screen on my iPhone, so it is not an app but she showed us to bookmark it on a home screen on an iPhone, so I just made it an app, and I can access it there.

Table 35a

Limitations of CollegeQorps

Student	Limitations statement
11	I think it's because it is only for one specific thing, like with other apps I can check everything at once, but with CollegeQorps I can only, I am in a group for Education, so if I have to check a class for History it will not be in there, so I have to go to a different app. Like Blackboard, I can literally just check everything at one place. I like CollegeQorps I think it is great but just being able to see everything that is what...

Campus technology preferences: Software and devices. Multiple platforms and social media sites caused students confusion and served as an added a burden to their already busy lives. Since students are balancing the demands of college, work, and home, they need a more streamlined process. Smartphones are the primary tool students use to communicate; therefore, messages need to be compatible with the limitations of the phone. Pop up alerts work well in getting students' attention. Short, meaningful messages can be seen in their entirety, allowing students to act on the message or ignore the content. Table 36 provides student statements regarding their campus technology preferences.

Table 35

Campus Technology Preferences: Software and Devices

Student	Statement
5	My preference is something that is going to have an alert that pops up on my phone so that I know right away
6	<i>Interviewer: Would that be helpful or something you would be interested in?</i> Yeah if they condensed it down to one or two different apps or websites, I think that would be a lot easier.
12	I have the Blackboard app, but with Power Campus, I use Safari on my phone.
5	Sometimes I am in a hurry, and I do not check Blackboard in the morning before I leave for school. But if my Gmail has a little icon that I got an email, I will put that open and see.

Summary of the Findings

The data collected resulted in the identification of specific areas of interest to the students interviewed in this study. These findings were grouped and coded into logical patterns based on the frequency and content of student comments. Students expressed academic concerns, including balancing responsibilities, identified supportive people, and resources, and shared their preferences and practices regarding their use of technology.

Academic concerns. Academically, professor support is sought after and generally supplied in face-to-face interactions, whether in class or during office hours. Students were most like to seek out instructors for personal classroom issues, such as poor grades or missing assignments. Some students found continuing support through the personal relationships they had with their instructors, which helped them to make essential connections on campus. Most students were optimistic that they could succeed in their curriculum and were able to identify helpful study strategies and find solutions when they did experience problems. Students expressed awareness of how a grade would affect their overall progress regarding group or scholarship status but seemed passive in their response to possible sanctions.

When students found themselves struggling, they admitted to being confused and unsure of where to get help. Students who struggled with homework assignments could become overwhelmed

and frustrated but either relied on their capabilities or failed to complete the requirement, rather than seek out help from peers or academic support programs. Heavy class loads and work schedules hampered students' time management skills for seeking out help and studying with peers. Some students found ways to use their phones for capturing class information, improving their daily organization, or connecting with classmates; others expressed frustration in using technology and preferred face-to-face interactions, or self-isolated to concentrate on their work.

Supportive people and resources. Tutors and professors were frequently mentioned on-campus supports, whereas peers, service providers, and friends served as off-campus resources. There was no direct connection between grades and tutoring. Those students who did not use tutors scored both the A and C ranges for their final grades, while students who used tutoring scored B- to A- as their final grades. Some students did show a reluctance to trust peers and classmates and preferred to go to the professor directly if they needed help. Although those students who used tutoring were able to give specific examples of how the tutor helped them in their studies.

Professors had various preferences for how students could make contact including, email, texting, web pages, and cell phones. Students reported professors shared contact information in the syllabus and that they had to use the professors' preferred method of contact, but agreed that if this information were streamlined, it made their life easier. Connecting with classmates was secondary in importance, but was available through Blackboard emails, if the students were in the same class. Blackboard and CollegeQorps records did not show students using the course email to communicate throughout the semester.

Balancing responsibility. Meeting class requirements was a priority for the students interviewed. Commuting college students split their lives between home and college, demanding higher levels of time management than their residential counterparts do. Grants and supportive

services, such as day-care, and programs that pay for travel or textbooks help commuting students to manage the extra demands they face in getting to and being prepared for classes.

Most students had the added responsibility of a job as part of their load. Some students said they could not come to tutoring because they had to go home or to work. Even high scoring students sacrificed study time if they had to get to work. Adult students also dealt with transporting and caring for their children throughout the day, splitting their day between college and home demands.

Access and use of technology. Technology included a wide range of devices, software, and social media. Students used email and texting as their primary communication tool. Smartphones allowed connection to most resources, but some programs were not fully functional on the device. Students used their laptops for more extended communication, but short texts and emails they handled on their phone. Some students were at ease with logging into the CollegeQorps site while others had continued difficulty with access and password problems. Beyond access issues, contact options within CollegeQorps and Blackboard limited the prospect of communicating across campus. Students could only contact those people participating in CollegeQorps or included in their specific class on Blackboard.

Having access to technology does not assure students will use it for academic purposes. Most of the communications that occurred through Blackboard, CollegeQorps, and Facebook dealt with reminders of tutor sessions, schedule changes for tests, and cancellation of classes or office hours. While no academic questions appeared on Blackboard, at least one student tried to get a study group together, and student nurses were showing the preliminary use of Facebook to pose questions or post resources.

Balancing communication across devices meant having to check multiple sites to get accurate information. Class cancellations were only on the college website, and instructors posted grades either in Blackboard or on Power Campus. Student emails and notices are filled with club events and marketing materials, but students wished they could have more streamlined access to communicate with teachers and classmates. Students suggested chat functionality and push in notifications would be useful for class cancellations as well as job opportunities and scholarship information.

Communication, socialization, and preferences. Student interviews reported that communication and socialization were extremely important; however, there was a limitation on how communication occurred. When connecting with instructors, students preferred face-to-face interactions. However, communicating with peers and or classmates was secondary in importance, and absent in some cases. Communication with peers provoked anxiety and students worried about not fitting in or becoming isolated. Peer connections were useful in networking or forming study groups for difficult classes. Those who did participate in study groups commented that they should have met more often or gotten together sooner.

Although avenues existed for off-campus communication through Blackboard or CollegeQorps, students did not take advantage of these resources to get in touch with their peers. One residential student reported contacting classmates to form study groups through social media or simply connecting in the hallway or residence halls: However, the sessions themselves were face-to-face rather than online. Although students seemed interested in finding friendships, the instances where these relationships occurred were infrequent.

Virtual communication platform interaction was also somewhat limited. The students who logged onto CollegeQorps did not establish conversations online. Even though nursing

students had created a Facebook page, the posts were more often social, or schedule related, rather than academic or supportive. Some students had reservations about using Facebook for academic reasons. Facebook was a communication tool for personal connections rather than college classmates. Some students found social networking intrusive and had difficulty using the platform, for either technical reasons, connectivity issues, or privacy concerns.

Reducing the importance of communication with peers to a secondary level resulted in feeling isolated. Some adult, returning students self-isolated, deliberately. While in other cases, the isolation occurred due to not knowing anyone at college, being introverted, or lacking effective communication skills. Students were able to identify poor interpersonal communication skills both personally and within their classmates.

Technology communication. Managing multiple paths for communication was a daily issue for students. Knowing which format to use for contacting instructors, checking grades, monitoring instructor feedback, and class schedule changes were confusing, and involved students juggling emails, texts, and website posts. Students gave priority to instructor posts and generally relied on happenstance for communicating with classmates and tutors. Understanding where and how to communicate does not assure that students will communicate. Although students mentioned using Blackboard to communicate with classmates, or visiting office hours to see faculty, no one carried through on those intentions.

For traditional students, social media use was a natural extension of their communication options. Returning adult students sometimes limited their social media use to personal communication outside of college or had difficulty using the format. Although some students used social media to contact classmates, actual study groups took place in face-to-face meetings. The addition of CollegeQorps as a communication tool failed to inspire students to use the

platform. Limitations as to who was on the platform and a general lack of rationale for why they should use the platform reduced student use.

While most students found it easy and helpful to use social networking, a few disliked communicating in this way. Communication platforms at the college were specific in their audience; students could email classmates to interact on CollegeQorps within that same group. Connectivity issues and device capabilities also limited technology use while phones were more popular for communicating; some sites reduced the functionality on the app setting. Connecting with peers outside of classes meant knowing their emails in advance; there was no universal way to contact students outside of class.

Overall students wanted to have a more comprehensive and streamlined way to handle communication on campus. Students wanted push-in notification that sent alerts to cell phones, rather than having to check multiple information sources. The current system of communication pushes information to the students but does not support reciprocal responses or student-to-student interaction.

Data presentation occurred chronologically in this study. The study begins with the collection of the attendance and grades data analysis, progresses to the inclusion of observations, evolves to a qualitative analysis of secondary data sources, and concludes with archival records. Aligning the data with the research questions is the final step in this process.

What role do virtual community platforms play in supporting academic outcomes for rural community college students? Table 37 shows student and tutor use of virtual communities.

Table 36

How Students and Tutors Used Various Virtual Communities

Virtual community role	Student use	Tutor use
Blackboard		
Reading posts	Students reported reading instructor, tutor, and peer posts	No activity
Responding to posts	Only three student responses were noted on Blackboard emails	No activity
Creating posts	Accidental homework post/ blank post	session reminders
Posting resources	One student posted a resource	shared resources
CollegeQorps		
Reading posts	Students could read any posts in the VLC	No posts to read
Responding to posts	Registration and checking on updates.	Nothing to respond to
Creating posts	One original student post to form a study group	session reminders
Posting resources	No activity	posted resources
Facebook		
Reading posts	No data is available	No data is available
Responding to posts	No data is available	No data is available
Creating posts	class cancellations, grades being posted, memes, student club announcements, some academic questions, and social support posts	reminders social support posts
Posting resources	posted resources	academic resources

How do urban and rural post-secondary institutions compare in their use of virtual community platforms to access academic and social support? Table 38 shows how the major themes of the study were distributed between rural and urban college students. Shared codes in the interviews concerned needing support in college, identifying supportive people and resources, and the impact of responsibilities on academics. Rural students mentioned self-doubt, being a first-generation college student, and commuting concerns, but found support through grants, staff, and programming supports. Urban students were concerned with having a safe space and getting

things done by the end of the day and found support through advocacy efforts, scholarships, and giving back to others.

Table 37

Comparison of Codes found in Transcripts from Rural and Urban College Students

	Shared Codes	Rural Codes	Urban Codes
Academic concerns and strategies	No support available, try to survive, disappointed	Self-doubt, first generation to attend college, commute,	Safe space, end of the day
Supportive people and resources	People who care, Grandparents, High school connections, Writing center, Office hours	Smiling, CSTEP, tips and advice, orientation mini classes, people check in on you.	Advocacy, scholarships, giving back to the community, Being a tutor,
Effective communication practices			
Student technology use			
Student responsibilities that affect coursework	Assist family, have a lot to do,	Difficult tests	Dropped a class, Consequences, Quit

What kinds of services and information do students want delivered through technology?

Table 39 show that students want streamlined, practical, and universally available access to emails, notices, academic resources, and social opportunities available on their phones, and laptops using push-in technology.

Table 38

Services and Information Students Want Delivered through Technology

	Contacts	Device preference	Networking
Emails	Better directory which includes access to all college students and instructors	Push in notifications that go directly to cell phone	Job and scholarship information
Notices	Streamlined notices, scholarships for specific groups or major-related job openings	Phone push in apps	Timely information regarding cancellations, jobs, financial aid and scholarships
Academic resources	Universally available homework sites, ties to graduates and employers	Phone, laptop, website	Ability to stay connected to classmates, tutors and peers for academic help
Social interaction	Access to all students	Phone, laptop, website	Connect and peers, mentors, and clubs

Results

Public post-secondary students have an interest in using technology and social media, but experience issues with connectivity, and understanding how to incorporate online resources to provide academic support. The sheer volume of information and the multiple pathways for communication at college can be overwhelming, causing students to miss valuable information or opportunities. Digital natives want instant access to relevant information when it occurs. College students rely on their cell phones for ongoing communication; however, app limitations demand laptop access to gain full access to web resources. Community college students arrive with technology preferences already established, but colleges demand students use campus-based programs to access information, submit classwork, and schedule classes. Overwhelmed by the many communication pathways, students may fail to connect with others or respond appropriately, and neglect important directives needed to navigate college successfully.

Chapter 4 Summary

The data for this study compiles multiple sources such as observations, secondary data from transcripts, and archival records. Observations included student input during tutor sessions and student visits regarding technology support. Most student comments related to appreciating the tutors providing a review of concepts for upcoming exams. Most notable was the lack of student attendance at tutoring session at the end of the semester or after a test. The tutoring sessions were primarily a recitation of the class lecture and students did not take active roles but preferred the tutors to rehash the crucial details they would need for the test. It became apparent that a true learning community did not develop within the tutor sessions.

The coded vendor interview transcripts revealed major themes, which emerged around academics, resources, responsibilities, communication, and technology. Students reported being at ease with technology and frequently using social media for their personal lives but did not engage in the social media environment provided by CollegeQorps. Email and texting were primary communication tools for academics. Students used college provided programs such as Blackboard, Power Campus, and Starfish to check their grades and communicate with instructors and tutors. Responsibilities such as childcare, family issues, and work consumed much of the students' time, and students reported being too busy to add one more thing to their to-do list. Those students with the heaviest responsibilities indicated an online virtual community, for academic support, would be very helpful in managing their busy lives.

Communication preferences are personal choices, which make it easier to interact with people you know well or contact frequently. Residential students share housing and meals and increase the chances of contacting each other, communicating through social media, or sharing mutual social connections. Commuter students must work on creating connections, but this

happens naturally for residential students. This study capitalized on the presence of Blackboard for most students and small classes that often consisted of the same group of students.

Students preferred face-to-face communication but used emails and texting when necessary. Most students met with peers, instructors, and tutors personally. Quick connections using chat or text feature were favorable for short communications, such as class cancellations or short questions. However, students preferred face-to-face contact for in-depth conversations with complex content.

When students discussed needing academic assistance from a tutor or an instructor, there was more interest in meeting face-to-face rather than checking in virtually. Students did show interest in having a push-in app or quick chat sharing information regarding school or class cancellations, scholarships, or job opportunities. While some student reported they would be comfortable using a tutor online, others said they were not likely to use a tutor at all and would go directly to instructors for academic help.

All students who participated in the interview earned passing grades for their courses. Students in the top and bottom grade ranges did not use a tutor at all. Students in the mid-range were more likely to use tutoring and other academic support throughout the semester. Two students reported understanding what the purpose of the social media platform was but did not participate online. The remaining students said they were not sure why to use CollegeQorps and did not see a reason to use the platform. Students who did visit the platform reported negative views of those who posted questions or did not see any posts and disengaged.

Chapter 5: Discussion and Conclusion

Aligning communication between colleges and students has changed due to the skills digital natives bring to the system. How can institutional leaders leverage the role of virtual communication to support academic performance? How do students at a two-year public institution use virtual community platforms to support their academic performance? How do students at urban and rural post-secondary institutions use virtual community platforms to access academic and social support? What kinds of services and information do students want delivered through technology? What role do virtual community platforms play in academic outcomes for students at public post-secondary institutions?

Examining how students are really using technology and what they want from technology is vital to capitalizing on the digital natives' insight and adapting this information to augment college success. This chapter will tie to the literature review provided in Chapter 2 and provide a summary of the research and a discussion of the results. Limitations of this study will be shared, along with implications for practice, policy, and theory. The chapter will end with recommendations for further research and an overall conclusion.

Summary of the Results

The role of digital communication in delivering academic support to improve outcomes and engage community college students is still a work in progress. This study provided evidence of how community college students used social media and technology to support their academic performance and showed a range of responses similar to the low use rate for these services in the face-to-face setting. Few community college students in this study posted questions, engaged in social interactions, or retrieved resources on Blackboard, CollegeQorps, or Facebook. Determining who read posts on these sites can be difficult due to the lack of response, and the

technology does not currently allow for that tracking process. Students' valued communications regarding their personal needs delivered through technology but tend to ignore general information and solicitations sent as texts or email.

Observations highlighted the difficulties some students had in using the virtual learning platform and indicated that the tutor services had evolved into a lecture-based format. The intention to create a dynamic learning environment was unsuccessful in both the online and face-to-face sessions and the live tutor sessions observed. Tutor sessions became informational rather than interactive with students just wanting to review what to know for the test. A sense of frustration with communication in general on campus and the pressure to perform well in class seemed to add to the overall anxiety level. The lack of student attendance toward the end of the semester also indicated a lack of community within the student groups. Those who attended sought individual attention for their questions rather than seeing the group as a source of assistance.

Role of Virtual Learning Communities. What role do virtual community platforms play in academic outcomes for students at public post-secondary institutions? Students used social networking to share resources and request or offer support for academic issues within the student-nursing cohort. Facebook posts involved students sharing notices of grade postings, club activities, networking, job and scholarship information, and schedule changes. One student tried, unsuccessfully, to recruit classmates for study groups in the electrical technology group. One traditional residential student used Instagram to send out inquiries as to when classmates could meet for a study session. Leisure time use of social media involved playing games or reading over posts on various sites.

Students mentioned some limitations in using virtual learning communities for academic reasons including ad distractions, and some classmates did not use the sites. The information posted was publicly accessible, causing privacy concerns for students. CollegeQorps had a limited group of class members, which reduced who you could contact on the site. Having to go to an additional site to log on and access classmates was an added burden when they could use Blackboard for the same purpose. Students had continued difficulty with passwords and did not understand how to use the platform, which rounded out the reasons that students chose not to use the site. Only one student used Instagram to connect and schedule in-person study groups.

Traditional students, considered digital natives, were more likely to use social media sites than returning adult students. Adult students reported using social media outside of college for contacting friends and family. Facebook provided entertainment and opportunities to post memes and videos that help to support the student-nursing group. Casual information that required short messages was popular on the site; for example, students communicated that test grades are up, or school closed for a snow day.

Smartphones served as the primary device for the community college students. It was easier for students to use phones for short messages and reading posts on the sites. Limitations included that not everyone participates, issues with connectivity and data use, the dominance of social use, and concerns about privacy.

What kinds of services and information do students want delivered through technology? Commuting college students want more efficient and comprehensive communication pathways at college. A centralized directory for faculty and classmates would make it quicker and easier to connect with others on campus. Important information should be concise and timely using push-in technology on smartphones and email. Students wanted school closing information,

networking, job search, and scholarship information streamlined for their specific majors. While some students like the idea of being able to connect with tutors if they had a question, no one used that service throughout the semester.

Although digital natives have grown up with technology surrounding them, their personal use of technology can foster self-imposed isolation. Returning-adult-students reported being time constrained due to home and work responsibilities. Traditional-aged students shared some time constraints, but also limited their social media connections to close friends, whom they knew before college.

Discussion of the Results

The findings of this study show that college students are comfortable with technology but prefer to use social networking for personal communication rather than academic communication. Academic programs wishing to offer academic support via virtual learning communities must consider how students use the web and their overall preferences regarding digital communication. Comprehensive service providers need to structure support to reach all college students, including those who are avid technology users or those who prefer face-to-face interactions. Although informal study groups may form on social networks, they may not be accessible to all students or lack an effective academic structure. Bridging the gap between social networking use and academic support is difficult due to access issues, time management overload, communication preferences, and declining social skills practices.

There is an incongruence between technology use and instructor-student communication. Students must adjust to multiple streams of information to navigate their college curriculum, making their task more complicated than necessary. Academic support programs offer hope for retention concerns and dwindling enrollment but getting students to use services continues to be

challenging. Creating learning communities has proven successful; however, commuting college students face dealing with students who have difficulty bonding due to commuting time and disparate groups of adult and traditional-aged students. This study attempted to offer online opportunities to form virtual learning communities but was unsuccessful in getting students to use the platform for that purpose.

Discussion of the Results in Relation to the Literature

A review of the literature regarding the support of digital natives through the lenses of social learning theory and sociocultural theory helped expose how students used technology for learning. The focus of this section provided a connection between the study results and the literature, the community of practice, and the community of scholars. Addressing the problem of providing academic support through virtual communities means colleges must adapt their communication, training, and support options to meet the needs of current students.

Community of practice. Academic support programs provide important services to meet the needs of college students. The results of this study reflect the hesitancy for students to use tutoring services and VLC supports both in person and virtually. Students in this study, who did not use tutoring felt that they could not rely on peers to provide support and saw instructors as a more reliable source of help, even though they did not visit office hours or use the LMS to ask questions.

Participation in the VLC was minimal and eventually ceased. Maintaining interaction within the VLC involves providing a clear framework and training students to collaborate as Hernández et al., (2014) suggested. The lack of direct structure related to the course-work along with the absence of student posts failed to create a learning community for the students. Tutors

within the VLC posted reminders for sessions and shared some resources; however, these posts served more as announcements rather than discussion opportunities.

The work of Chunngam et al., (2014), mirrored the difficulties in getting people to participate in virtual communities and stressed the importance of having a knowledgeable expert lead the group. In college classes that knowledgeable expert is often the instructor, which meets the needs of students looking for validation in the course. Although tutors in this study could meet with their instructors to help guide their discussions, their sessions became recitations of the class lecture rather than opportunities to apply learning. Furthermore, the students in this study asked for their sessions to be content reviews and chose to participate passively.

Relating results to the literature. Combining the research in tutoring, supplemental instruction, remediation, virtual communities, and student characteristics provided a new consideration for how to deliver academic support. Technology advances made information instantaneous for college students; however, the students in this study still experienced limitations and curtailed their use accordingly. Using technology to create learning communities increased the need for collaboration skills that current students lacked due to their tendency to self-isolate in college. Overcoming these limitations and embracing virtual learning communities will require careful planning, training, and comprehensive academic support.

Technology Uses and Preferences. As suggested by Kasakov et al. (2018), many problems stemmed from ineffective communication practices, involving the use of multiple programs and protocols that seemed obsolete to the current students. The students interviewed in this study showed a clear preference for streamlined communications that occur rapidly. This could be addressed through comprehensive planning for what is expected to occur in the VLC (Hernández, González, & Muñoz, 2014). All students interviewed were adept at using their

devices to connect to email, LMS, and some virtual learning communities. New students are learning how to participate in college, orientation to the expectations of a VLC can seem overwhelming at first (Williams, 2017). Introducing a new VLC on top of all the other ways students already connected proved to be ineffectual for these students. Students struggled with passwords and failed to see the utility of the new platform, especially if they were already using another method to connect with other classmates and instructors.

Several students complained about having to deal with multiple interfaces to get college information. Having to check email, Blackboard, Starfish, CollegeQorps, and phone messages were overwhelming and duplicative for these students. Getting people to participate can be difficult; Informal virtual communities and social networking helped some students to stay connected socially, with family and friends but were used less for academic purposes (Chunngam, Chanchalor, & Murphy, 2014). Although students mentioned using Facebook or Instagram to communicate, the communication was mostly outside of school and academics. Even when the virtual communities were used academically, this was limited to setting up face-to-face study sessions, social interactions, sharing updates reminders, and sharing an occasional resource or video (Kircaburun, Alhabash, Tosuntas, & Griffiths, 2018). A few students showed reluctance to use virtual communities with peers as a study resource and preferred to remain isolated or to contact instructors directly, rather than trust their peers.

Creating supportive networks. Virtual learning communities can be ideal tools to help students develop skills to create effective teams; however, these students had not been trained to work as a virtually collaborative team before the semester occurred. As suggested by Hernández et al., (2014) students require training in how to work collaboratively within the virtual learning network. Furthermore, Marin (2014) addresses how the interactions of technology and humans

create a blend of skills that affect how humans and technology work together. Difficulties logging into the VLC, a lack of structure provided, and the lack of students posting on the site discouraged the students from participating or forming a learning community.

Students relied on the LMS to check grades and check course resources and could have used these systems to create virtual learning communities; however, they lacked direct training in how to use these interfaces for communicating with other students both within their courses and across campus (Hernández, González, & Muñoz, 2014). Although students had LMS, shells for their courses, communication across campus and were limited to only those students enrolled in the same class. Students were able to connect with classmates for required group projects but preferred to keep to themselves in most cases. Connecting with friends outside of class relied on knowing emails or phone numbers to stay in touch. Students were too busy keeping up with college, work, and family to invest in each other.

Academic concerns and strategies. The students in this study showed reliance on communicating through electronic devices, which caused them to self-isolate socially, limiting their social interaction skills (Kasakov, Koshee, & Bobrov, 2018). Several students in the study stated they preferred to be alone, whether using a study space, taking a break, or preparing for tests. A few students stated they did not have friends in college or find it easy to make friends. Going to college was simply a work-stop in the day, and students did what was needed at school, essentially clocking out and then returning to their personal life.

This lack of connectivity with these students is troublesome in that their future worksites will demand well-rounded individuals who can perform in a team setting, particularly in career-based fields (Prensky, 2012). Even students who were high performers had a lone wolf attitude that could be problematic in the workplace. Relying on the instructor for continual guidance may

translate to relying on supervisors to tell what to do at work, rather than becoming a productive member of the group by learning to trust your team.

Within the LMS, information was one-directional, emanating from instructors or tutors in the form of announcement to update students. Students did not utilize the LMS to contact instructors, classmates, or tutors, even though they mentioned that strategy in their interviews. More structure and orientation to the VLC could help students to become more proactive within the platform (Hernández, González, & Muñoz, 2014). This process was replicated in the VLC as well; however, students continued to check into the LMS, whereas they stopped visiting the CollegeQorps site. Students stated they had access to the same information from tutors in both sites but were able to check grades and other resources in the LMS.

Results related to the community of scholars. Academic support continues to be essential in maintaining current students, particularly as enrollment declines impact college operations. Knowing that current students are skilled in using technology to participate in social networking and virtual communities provide additional ways to deliver resources and support. The students in this study wanted streamlined communication options to stay informed, access resources, and check grades. Students were comfortable using Blackboard to stay connected to their classes and eventually (post- study) learned to use the LMS to communicate with peers and tutors.

Overall, students did not rely on virtual communities for academic purposes. Student nurses in this study used Facebook to stay connected, share resources, and socialize: Posts that occurred were more social than academic. While the students in this study knew how to use the LMS on campus to access resources and check grades, almost no students posted across 19 different live classes, as opposed to web-based classes.

Instructor posts were also limited, usually pertaining to schedule changes or announcements. No one was using the extensive capabilities of the LMS to discuss class work. Since the classes were face-to-face offerings, students may have just spoken during or after class. Eventually, students did use the email capabilities of the LMS to post questions in the following semester, indicating a residual effect of being exposed to the virtual communities.

Limitations

Understanding motivational factors that encouraged students to use academic supports, such as tutoring, aids program development and plays a decisive role in increased retention and graduation for community college students. Limits in this study involved the use of convenience sample based on one community college in a rural location within SUNY. The population is also constrained to only career-based majors pursuing an Associate of Arts (AAS) or Baccalaureate degree who are typically career rather than transfer bound. Extrinsic factors such as family responsibility and employment played a role in students seeking out and using tutoring as well as feeling belongingness to the group (Di Tommaso, 2012). Students' connectivity to the internet was sparse or nonexistent in some rural areas, limiting their ability to participate outside of campus (Creative Research Systems, 2012). The timing of the study took place during the first freshman semester and students were new to the college experience, which means they were learning how to be college students during the duration of the data collection.

Implications of the Results for Practice, Policy, and Theory

Helping digital natives to develop effective interpersonal communication skills will take on new methods to increased reliance on technology. A sense of loneliness and social isolation evolves through students' interviews making the need for face-to-face conversations and means of support more crucial than ever. It is clear that the students in this study highly valued face-to-face

communication but seemed to reserve that practice for interacting with instructors rather than classmates.

Social skills become increasingly important when communication problems arise. Students' tendency for self-isolation could be related to a lack of practice or motivation in using face-to-face personal communication. Being social is a skill set that develops through the use and refinement of techniques; however, less practice can limit the opportunities for critical reflection resulting in a sociocultural ignorance (Mezirow, 1990). These skills will be even more important as college students' transition into the workforce. Because the focus of the study shifted from quantitative to qualitative, the information from the survey was not able to speak to an understanding of the motives influencing participant-use of the virtual learning community.

Practice. Faculty members must recognize the importance of communicating with students in their preferred modes of communication. Prescribing how and when communication will occur within a class can help students attend to the important aspects of the course. Using the campus LMS or a VLC can direct students' efforts and reduce instructors need for responding to the clutter of multiple emails, texts, or other forms of communication.

Offering a VLC in face-to-face classes provides students with an out-of-class connection to learning and an expectation that all students will post and respond to their classmates. Learning communities assist in moving students to an applied application of their learning including student tutors and mentors, must rather than just a recitation of class concepts. Activity in the VLC can also serve as a form of assessment to address student-learning outcomes.

While technology has accompanied digital natives in their every move, since birth, it is still in the developmental phase in providing academic support. Academic Support programs must be aware of the methods being used to support students in their classes. Familiarity with the

VLC protocols can help students to participate actively in their coursework. Many incoming students in public post-secondary settings will need help in collaborating in the VLC, and academic support staff can reinforce the protocols and expectations for course assignments.

Increasingly, students enrolling in public institutions need assistance with effective communication, and proper instruction of technology used to support college-level work. Training staff, including student tutors and mentors, must include actively supporting collaboration with virtual learning opportunities on campus. Strategic placement of supporting tutors in students' virtual learning communities can expedite communication and reinforce the legitimacy of using academic resources.

Academic support staff and student tutors need to develop a close working relationship with the faculty and students they serve. Using tutors familiar with course expectations and checking in regularly with instructors on student progress serves as an ongoing assessment throughout the course. Academic support can be proactive in recognizing challenging course requirements by working with the instructor to identify needed resources and preparing the tutor to help guide students toward successful completion. Students may also discuss areas of difficulty within live tutoring sessions, and the tutor provides feedback to academic support and instructors, so they are aware of the situation.

Policy. Many programs, platforms, and social networking sites aspire to meld into the college-level experience and profit from their need to fulfill the demands presented by digital natives. As seen throughout this study, digital natives still value face-to-face communication and can become overwhelmed with multiple avenues of input (Turkle, 2015). Therefore, public post-secondary colleges need to strategically-plan their communication pathways and the technology they employ.

Campus information-technology personnel need to be aware of how they are asking their students to interact digitally. Streamlining information pathways so the students can connect to both instructors, support staff, and classmates through one comprehensive directory would improve communication. While campus staff receives training in using their campus LMS, students, typically, figure it out on their own. Incorporating student training in using the college LMS during orientation or first-year experiences could help prepare students for success.

Incorporating virtual learning supports into academic support is an option but not a complete answer. The myriad of variables in technology and the digital natives using it stimulates many questions as to who will use these platforms and how they will be used (Garcia et al., 2015). College information technology staff needs to be aware of how students respond to the technology they offer (Prensky, 2012). While selective private colleges and graduate schools may enlist students with superior communication skills, who easily adopt VLC protocols, public community and baccalaureate colleges may find that students need support in developing effective communication and collaboration skills to use virtual learning communities.

It will be essential to simplify and streamline communication pathways so that public post-secondary college students respond appropriately and make connections that help to support their academic and career goals. These efforts will help to ensure students are communicating effectively on programmatic, academic, and personal levels. Better communication will support retention and completion efforts, which are increasingly important to academia.

Theory. Virtual learning communities are successful in providing an opportunity for students to engage in elaborative discussions related to classroom learning. However, they are only useful if students engage and commit to participating in the community. Colleges who want to create successful virtual learning communities must provide a welcoming and structured format

that fits their campus demographics. Once the VLC is prepared, students need both information and scripted guidance in using the platform. Providing support staff through either instructors, support staff or tutors will be essential during the first weeks of engagement in the VLC. Support staff should have explicit training in guiding new students through the VLC and on the communication portals on campus.

Organic, or informal, social networking platforms are used by college students and colleges may believe this avenue is adequate for providing academic support. However, social networks promote their advertiser's concerns, not the academic needs of the students. In this study, student nurses used Facebook for social college communication more so than academic support. Virtual learning communities need a knowledgeable leader to function effectively. Relying on students to provide that academic structure is unlikely and unfair to the students' involved. Instructor presence in the VLC can provide the structure, and expert knowledge students need to stay on track. Creating curriculum pathways can help to reinforce participation in the VLC.

Social networking consists of many types of personal connections, however, social networking sites limit the knowledge available to participants based on their commercial interests (Kasakov, Koshee, & Bobrov, 2018). In Vygotsky's social cultural theory, the supports in your immediate community influence the availability of resources and understanding of what it means to be a college student (Gredler & Shields, 2008). If learning is limited to a specific range of knowledge the learner is stunted in their social networking, which limits their cognitive growth (Mezirow, 1990). The presence of the group determines the content discussed; negating the opportunity to think beyond the boundaries of the group.

Boundaries produced within the culture will further influence the lack of opportunity to use critical thinking and benefit from the reciprocity of consequences related to actions (Bandura, 1977). One example of a boundary would be a lack of student participation in the VLC and students' unwillingness to rely on peers as a learning resource. Since learning takes place in a social context but students preferred to self-isolate, they missed developing critical thinking opportunities supported through social learning. More structured pedagogy would assist students in adopting the use of the virtual learning community and might help students to participate rather than isolate during their college experience (Hernández, González, & Muñoz, 2014). The increasing tendency for students to isolate will negatively influence their opportunities for social learning experiences.

Recommendations for Further Research

While this study is limited to career-focused majors at public colleges, the issue at hand is important across majors at the baccalaureate, graduate and online education programs. In the semester following the research study, an increase in student to tutor communication evolved in the Blackboard community. Students' second-semester adoption of Blackboard emails suggests that skills learned in the first college semester were not fully utilized until later in the academic career. Research incorporating a longitudinal approach to structured academic support in the college learning management system could help to identify when and what levels of support are need to create effective virtual learning communities.

Comparison research exploring academic support using social networking platforms, such as Facebook to contained LMS systems such as Blackboard could help to distinguish the critical characteristics that support the existence of virtual learning communities. Many college students may lack a structured approach to higher education learning and would benefit from a planned

and integrated academic support approach that includes both in person and in an online support environment. A study that examines the impact of a structured academic support plan, as compared to an organically forming student virtual learning communities, could delineate between casual and planned interventions.

The wide variation in student demographics offers additional research opportunities in expanding virtual learning communities to students in private and online programs. Offering virtual learning communities for all college work is achievable using the campus LMS. Embedding assessment of learning outcomes for students in various environments could help to identify the types and levels of support needed to support effective virtual learning communities.

College communication is frequently unidirectional, flowing from the college to the student. Learning management systems are underutilized from the student perspective. Training students to use the tools within the system and incorporating this skill into the curriculum would enable students to use the learning management system more comprehensively (Zhang, Fang, Wei, & Wang, 2012). Zhang et al. (2012) believed that students must establish psychological trust in the format to participate fully in the online entity. Empowering students to use the interface more comprehensively would help to build their confidence in and use of the platform. An added advantage of using the learning management system would allow the college more control of the content and the data that ensues, rather than abandoning these conversations to public social networking sites.

Conclusion

Incorporating the needs of digital natives with the opportunities found in social networking to create virtual learning communities is an ongoing work of progress. Technology is simply a tool, and college personnel need to find the best way to employ that tool for their student

population. The cleft between digital immigrant college staff and digital native students is broad enough to cause serious miscommunication problems. Resolving communication issues is necessary to maintain current students and support their completion.

Although digital natives were born in a technological age, they still need to develop effective communication skills. Adults learn and grow through social interaction; technology has reduced face-to-face social opportunities. Heavy reliance on technology has changed the way we communicate. As communication occurs asynchronously and behind the scenes in an email, texts, and social media, interpersonal skills have diminished due to a lack of face-to-face interaction. When young adults enter college, they have an opportunity to participate in a community of learners. At the community college level, many students have added barriers to learning; they may be the first in their family to attend college, need to work full time while attending college, and may struggle to see themselves belonging to their campus environment.

Academic support programs do not reach many students who need help. Acclimating to the changing communication preferences of the digital native students includes embracing technology as a strategy to reach out to students in need of assistance. It is essential to building community among these students to help them develop a sense of belonging within the campus setting. Examining how and why digital natives use technology and social media can provide vital clues in how to support these students.

This study has provided an insight into the busy lives of college students who are trying to do their best to meet the demands of academia while vaulting major challenges in overcoming the obstacles in their path. Poor communication often lies at the heart of most problems. Helping to improve communication, with, and among students, can foster an experience that will allow them to master these challenges; this work is central to academic support personnel. Understanding

and respecting the different ways today's digital natives have come to know their world and incorporating their needs into college communication systems is a new and exciting challenge. Technology is a tool that can assist student learning, but effective communication builds critical reflection, which is necessary for critical thinking and cognitive growth.

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Appendix A: Consent Form

Research Study Title: The effect of social media platforms in supporting use of tutoring and improved student learning outcomes

Principle Investigator: Eldora M. Fosmire

Research Institution: Concordia University Portland Oregon

Faculty Advisor: Candis Best

Purpose of the study

You are invited to be in a research study of how technology can affect tutoring efficacy. You are being asked to volunteer, which is to consent, to being in this study because you are a student enrolled in an AAS program in a vocational major. We expect 130 individuals to be asked, like you, to participate in this study. No one will be paid to be in the study.

Why are we doing the study?

Tutoring is an important service in supporting student learning. Many students today are at ease with using technology through their tablets or phones. Combining the ease of communication through technology with tutoring can help busy adults access academic supports via technology.

What happens in the study?

To be in the study, you must agree to receive online communication through your tablet/computer or phone regarding tutoring sessions, class resources, and reminders. Tutoring services will be available to you and you may use those services on a voluntary basis. You will be provided feedback on the average grades on exams for those who used tutoring and those who did not. Attendance at tutoring sessions will be recorded for these purposes.

One part of the study asks you to allow the researcher to collect grade and attendance information. The ONLY information we ask for is

1. School test results, final grades, and your GPA.
2. We need this information because it will help us know if attending tutoring improves student grades.

☐ Check box if you say “Yes” to allow researcher to access your grades and attendance at tutoring sessions:

#1. Your school’s name is XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

☐ Check box if you say “Yes” to allow the researcher to access this information:

#2. Your researcher’s name is XXXXX,

What are the benefits?

The benefit you may have is having access to tutoring from the beginning of the semester. You may adapt more proactive study skills because of attending tutoring which could positively affect your grades. You will also receive the benefit of being a part of a learning community and experience the ease of communicating through your tablet, computer, or cell phone.

What are the risks?

You might encounter opposing opinions or beliefs while participating in a tutoring session or through online communication. If you are uncomfortable with communication content, please notify the researcher at [Researcher email redacted]. After we talk, if you remain uncomfortable or have stress due to our talk, you can call or write us (the principle investigator: Dr. Candis Best, at cbest@cu-portland.edu who works at Concordia University in Portland).

What if I want to stop, or take away consent from some part of the study?

You will still be able to get tutoring services that anyone coming to the learning center can get. If you want to stop volunteering and cancel your consent, please contact Dr. Candis Best at cbest@cu-portland.edu who works at Concordia University in Portland, by writing email or mailing a letter to the address at the end of this paper.

How do you keep my data private?

There is always a little risk collect data. But, we promise to keep your information confidential. The records will be kept private. In any report we make, talk, or write about, we will not include any information that can identify you. Only one researcher will have data that can be linked to you: the person who is the principle investigator. Study data will be coded and kept in ways that hide the data (encrypted data) from anyone outside of the study investigators. Study records will be stored securely. If information is learned that is important to you, one of these two people will contact you in a private way. We do not think you will need to be contacted because we only think that we see differences in big groups of people. We will report (publish) the group data – that is, no one will know what data that comes what person. After this study, any data or recording that could link to you any of your personal data will be erased and destroyed.

What if I have questions?

You will be given a copy of this consent form. If you have any questions about the study, you can contact the lead investigator, Dr. Candis Best. If have questions about the study – but want to ask a person who is not working in the study, you can contact the participant and volunteer advocate, Dr. OraLee Branch, IRB Director, 503-493-6390, irb@cu-portland.edu, Concordia University, 2811 NE Holman St, Portland, OR 97211.

You can still volunteer for the study by consenting and signing below.

Your statement of consent:

I have read the above information. I asked questions if I had them, and my questions were answered. I volunteer my consent for this study.

Participant Name

Participant Signature

Date

Parent or Guardian Name (if participant is a minor)

Parent or Guardian Signature Date

INVESTIGATORS:

Professor Candis Best

Redacted

Concordia University – Portland

Institution-REDACTED

2811 NE Holman St

Portland, OR 97211

cbest@cu-portland.edu

Investigator Name Date

Investigator Signature

Date

Appendix B: The Self Determination Scale (SDS)

Scale Description

The Self Determination Scale (SDS) was designed to assess individual differences in the extent to which people tend to function in a self-determined way. It is thus considered a relatively enduring aspect of people's personalities which reflects (1) being more aware of their feelings and their sense of self, and (2) feeling a sense of choice with respect to their behavior. The SDS is a short, 10-item scale, with two 5-item subscales. The first subscale is awareness of oneself, and the second is perceived choice in one's actions. The subscales can either be used separately or they can be combined into an overall SDS score (Sheldon & Deci, 1993).

Instructions: Please read the pairs of statements, one pair at a time, and think about which statement within the pair seems more true to you at this point in your life. Indicate the degree to which statement A feels true, relative to the degree that Statement B feels true, on the 5-point scale shown after each pair of statements. If statement A feels completely true and statement B feels completely untrue, the appropriate response would be 1. If the two statements are equally true, the appropriate response would be a 3. If only statement B feels true And so on.

1.

A. I always feel like I choose the things I do.

B. I sometimes feel that it's not really me choosing the things I do.

Only A feels true 1 2 3 4 5 **Only B feels true**

2.

A. My emotions sometimes seem alien to me.

B. My emotions always seem to belong to me.

Only A feels true 1 2 3 4 5 **Only B feels true**

3.

A. I choose to do what I have to do.

B. I do what I have to, but I don't feel like it is really my choice.

Only A feels true 1 2 3 4 5 **Only B feels true**

4.

A. I feel that I am rarely myself.

B. I feel like I am always completely myself.

Only A feels true 1 2 3 4 5 **Only B feels true**

5.

A. I do what I do because it interests me.

B. I do what I do because I have to.

Only A feels true 1 2 3 4 5 **Only B feels true**

6.

A. When I accomplish something, I often feel it wasn't really me who did it.

B. When I accomplish something, I always feel it's me who did it.

Only A feels true 1 2 3 4 5 **Only B feels true**

7.

A. I am free to do whatever I decide to do.

B. What I do is often not what I'd choose to do.

Only A feels true 1 2 3 4 5 **Only B feels true**

8.

A. My body sometimes feels like a stranger to me.

B. My body always feels like me.

Only A feels true 1 2 3 4 5 **Only B feels true**

9.

A. I feel pretty free to do whatever I choose to.

B. I often do things that I don't choose to do.

Only A feels true 1 2 3 4 5 **Only B feels true**

10.

A. Sometimes I look into the mirror and see a stranger.

B. When I look into the mirror I see myself.

Only A feels true 1 2 3 4 5 **Only B feels true**

Scoring Information for the SDS. First, items 1, 3, 5, 7, 9 need to be reverse scored so that higher scores on every item will indicate a higher level of self-determination. To reverse score an item, subtract the item response from 6 and use that as the item score. Then, calculate the scores for the Awareness of Self subscale and the Perceived Choice subscale by averaging the item scores for the 5 items within each subscale. The subscales are:

Awareness of Self: 2, 4, 6, 8, 10

Perceived Choice: 1, 3, 5, 7, 9

Appendix C: The Social Connectedness and The Social Assurance Scales

(Lee & Robbins, 1995)	Strongly Agree					Strongly Disagree
	1	2	3	4	5	6
1. I feel disconnected from the world around me						
2. Even around people I know, I don't feel that I really belong.						
3. I feel so distant from people.						
4. I have no sense of togetherness with my peers.						
5. I don't feel related to anyone.						
6. I catch myself losing all sense of connectedness with society.						
7. Even among my friends, there is no sense of brother/sisterhood.						
8. I don't feel that I participate with anyone or any group.						
Social Assurance Scale						
1. I feel more comfortable when someone is constantly with me.						
2. I'm more at ease doing things together with other people						
3. Working side by side with others is more comfortable than working alone.						
4. My life is incomplete without a buddy beside me.						
5. It's hard for me to use my skills and talents without someone beside me.						
6. I stick to my friends like glue.						
7. I join groups more for the friendship than the activity itself.						
8. I wish to find someone who can be with me all the time.						

Appendix D: Tutor Directives for Communication

All students on campus have access to Blackboard as the LMS. Since tutors are active students on campus, they have knowledge and experience in using Blackboard to support their class work. Tutors are placed within the class sections they support with access to the communication preferences of the instructor; some use email within Blackboard while others use a messaging system built into the program. Academic support staff is also placed in the Blackboard sections with communication access and the ability to view grades the instructor has posted.

Tutors are shown sample agendas that they can share with their section. Typically, tutors post notices about upcoming tutoring sessions, reminders, and share resources such as review sheets. Academic support staff uses Blackboard to promote use of the program, share resources, and report differences between test grades for participants and non-participants.

Tutors will be exposed to the virtual learning platform, CollegeQorps, before the research occurs. An overview of the platform, including various functions will help tutors to navigate the platform. Tutor will be instructed on which of their students will receive access to CollegeQorps. The tutors can share the same information as on Blackboard. Tutors will be encouraged to post two times weekly, which can range from posting an agenda for the next session, simply checking in, or following up comments on tutor sessions. The communication will be the same regardless of platform. Differences could occur in CollegeQorps communication due to additional options in the program. After initial postings, tutors should only respond to student-initiated posts. For example, a tutor posts the next meeting agenda, student A asks to confirm the meeting point, tutor responds.

Appendix D: CollegeQorps Account Email



From: Corporate Headquarters admin@learninggateway.com

To: Undisclosed Recipients

Subject: CollegeQorps email account

Message:

You can now sign up for Beta access to CollegeQorps by following these steps:

- Click the sign-in button on the [CollegeQorps home page](#)
- Click the sign up link and complete the registration information fields
- Your invite code is de70cd5

Please reply to this email once you have completed the sign up process (or if you encounter any difficulties). We will upgrade your permissions once you have completed registration.

Support Services

CollegeQorps

Appendix E: CollegeQorps Directions and Logon Information

QUICKSTART GUIDE

Welcome to the PERKS Study on CollegeQorps. You have been randomly selected to use the CollegeQorps community platform during this study. This Quick Start Guide will walk you through how to get started.

Step 1 - Complete your registration on CollegeQorps

An invitation will be sent to your FMCC student email account. It will come from the CollegeQorps Support Team with the subject line: PERKS Study - ACTION NEEDED.

1. Open the email and click on the link under the words “Click *here to accept*.” This will take you to the registration page.
2. Complete the information requested and then click “Register *Account*.”
3. You will receive an email confirming that your account has been activated. You can now login using the credentials you created.

Step 2 - Complete Your Profile

Your first login will take you to the CollegeQorps News page.

1. Go to the upper left corner of the page and click on the white arrow next to your name. This will expand the section to reveal a link for “Profile *settings*.” Click on that link.
2. That will take you to the page where you can upload a forward facing picture to your profile. (Note: The file size of your picture must be less than 5MB)

Appendix F: How Can Employees Login to the TimeStation Site or Mobile App?

Last Updated: Mar 16, 2013 05:24PM EDT

Employees can use their individual email and password to login to the TimeStation Site or TimeStation Mobile App. Employee login for the mobile App is only required if employees need to login to the TimeStation App using their own email and Password. A login for the mobile App is not required for employees to punch-in and out.

Employee access to the TimeStation site or Mobile App must be enabled by a company administrator.

- 1) Login to your account at <http://www.mytimestation.com>
- 2) Click on "Employees"
- 3) Select the employee"
- 5) Under "TimeStation Access", enter the employee's email Address
- 6) Under Permissions select "Login to the TimeStation App"
- 7) Click "Save"
- 8) The employee will then receive an email to setup their password.
- 9) Employee should download the TimeStation App and login using their email and Password

Appendix G: Academic Support Communication

Thanks for attending a PERKS session

Thanks for attending a PERKS session. Your participation in these group-tutoring sessions will help you to critically reflect on topics discussed in the session. As the Academic Success Coordinator, I am dedicated to making your academic experience rich and rewarding. Your ideas and feedback are essential to bringing the best learning situation to your education. Your PERKS tutors are Peers Engaged in Reinforcing YOUR Knowledge and Skills

I have attached a QR scan code to make your sign-in process quick and easy. You can either scan your card or enter in the first four digits of your student ID to sign into the session. Please be on time for your session so that you can stay on topic and prepare for your projects and exams.

PERKS life hacks

Cut out your PERKS QR code and tape it in a convenient location (on the back of your FM ID or Cell, or inside your binder or textbook).

Appendix H: How to use PERKS to Improve Your Grades

You know what to expect on the test but when someone asks you explain an expected concept you freeze. You remember this was lectured and that you had this information in your notes and then draw a blank. What was the actual structure? You remember there was something about the first steps. Was there an important exception? You thought you knew this!

Or you feel you never had a firm grasp on the material in the first place but studying with the PERKS group helps to highlight important information and reassure that you are on track.

PERKS study sessions help you personalize and interact with material with an experienced tutor; this is much more difficult to do independently.

Your PERKS session will help you to figure out what you don't know, and what you do know. Which allows you to target your remaining study time on topics you are not so familiar with, thereby making your studying more efficient and saving you time in the long run.

PERKS groups are small groups and the tutor helps to moderate the session and keep the group focused, saving you time in the end.

Appendix I: When You Go to PERKS

Decide the topics you need help with and would like to discuss BEFORE meeting. All members should commit to preparing that material PRIOR to meeting. Do not take on too much material for one session.

You should thoroughly prepare and identify key points and areas of confusion within the material to be covered in the group.

The tutor will help to quiz each other on the material. Treat this like an oral exam. Come into the group well prepared but be ready to identify areas that you do not understand.

You should have three goals in mind when you go to PERKS.

1. Emerge from the group with a list of what you DO NOT KNOW YET (material you need to spend more time learning). This is golden information. Once you know where your weak areas lie, you can spend more time studying these topics. After the study group meets, you should develop an action plan and schedule enough time to study these topics.

2. Determine what you already know well. Often these will be the topics you will help teach others. It is important to identify objectively what you know well so you can spend your time wisely on topics that you do not know. Of course, you will review all the material before the exam, so do not worry that you will not be prepared.

3. Personalize and interact with the material. This is much more difficult to do independently; interacting with others optimizes your process. You are much more likely to assimilate information (make it part of your memory) when you make it your own. If you simply read the pages in a textbook repeatedly, you are not so likely to learn as if you take your own notes (personalizing), review your notes (personalizing), and quiz yourself on the information.

Appendix J: Data Collection Spreadsheet Sample Headings

Sample report

	Perks 1/31			Math	VLC (Y/N)
				Portion of Math test score s	
bp81888	x		19		
es82340	x		19		
cs76723	x		15		
cs81858	x		20		
rs78582	x		16		
es75231	x		18		
bt57168	x		19		
jt88936	x		14		
mu59578	x		8		
dw14892	x		18		
	x	Class	17.3265 3		
		Nonperks	16.9142 9		

Appendix K: CollegeQorps (FMCC) Pre-Interview Questionnaire

Thank you for your interest in participating in a CollegeQorps customer discovery interview. If selected, the actual interview will take place by phone and will take 20–30 minutes. At the conclusion, you will be sent a \$25 Visa gift card as a thank you for participating. The first step is to answer the pre-interview questions below. Your answers will be kept strictly confidential. You are free to skip any questions you do not want to answer (except those that are required) and there is no right or wrong answer to any of the questions. However, please note that eligibility for the interview (and the \$25 gift card) will be determined, in part, by the amount of information provided through this questionnaire. Thank you.

Email address*
Valid email address
This form is collecting email addresses. Change settings
Full name
First and Last name
Gender
How old are you?
How many college credits have you earned to date?
"Earned" means completed and would appear on a college transcript
How many college credits are you currently enrolled in this semester?
Which days of the week do you have classes on campus this semester?
Check all that apply
What is your current major?
If you have not declared a major yet, write "undeclared"
No at all satisfied
Extremely satisfied
Have you participated in extracurricular activities on campus (e.g. student clubs, sports teams) this semester?
Have you participated in co-curricular activities (e.g. internships, service-learning, clinical rotations, etc.) this semester?
Have you been to a PERKS (tutoring) session this semester?
Have you EVER been to a PERKS (tutoring) session?
Go to section 1 (CollegeQorps (FMCC) Pre-Interview Questionnaire)
Go to section 2 (Haven't used PERKS)

Go to section 3 (Have used PERKS)	
Go to section 4 (About you)	
Go to section 5 (College expectations)	
Haven't used PERKS	
Description (optional)	
Why have you not used PERKS services?	
	Go to section 1 (CollegeQorps (FMCC.. Interview Questionnaire)
	Go to section 2 (Haven't used PERKS)
	Go to section 3 (Have used PERKS)
	Go to section 4 (About you)
	Go to section 5 (College expectations)
Have used PERKS	
How did you hear about PERKS?	
Why did you go?	
	Go to section 1 (CollegeQorps (FMCC.. Interview Questionnaire)
	Go to section 2 (have not used PERKS)
	Go to section 3 (Have used PERKS)
	Go to section 4 (About you)
	Go to section 5 (College expectations)
About you	
We'd like to know a little more about you in this section. Again, all of your answers will be held strictly confidential.	
Who shares your household with you?	
Check all that apply	
Other...	
Please tell us about your communication/social media channel use. How much do you use the services listed below?	
Daily	
	Several times a week
	At least once a week
	Several times a month
	At least one a month
	Less than monthly
	Have an account/Never use
Do not have an account	
	Cell phone
	Texting
	School email
	Personal email

Facebook
Twitter
LinkedIn
Instagram Snap Chat WhatsApp FaceTime
Skype
OoVoo
GroupMe
Periscope
Other not mentioned

Are there any college graduates among your immediate family?
Other...
How long ago did you finish high school?
Why did you choose to enroll in college now?
What is your current employment status?
The past 30 days, have you ever skipped a meal or cut the size of your meal because you did not have enough money for food?
In the past 30 days, did you not pay or underpay your rent or mortgage?
In the past 30 days did you not pay the full amount of a utility bill you are responsible for (gas, oil, electricity, internet or cell)?

In the last 30 days, did you move in with other people, even if it was temporary, because of financial problems or because you did not have any place to stay?

In the past 30 days, did you stay in an abandoned building, an automobile or any other place not meant for regular housing, even for one night?

Go to section 1 (CollegeQorps (FMCC.. Interview Questionnaire)

Go to section 2 (Have not used PERKS)

Go to section 3 (Have used PERKS)

Go to section 4 (About you)

Go to section 5 (College expectations)

College expectations

Finish the sentences below

"I will consider my college experience well worth the time and money spent, if . . ."

If you received a special invite code, please enter it below. If you do not have a code just click submit to complete the survey.

Appendix L: Interview Questions

[Questions and Notes]

Thank you for taking the time to speak with me today. I am going to be asking you series of questions related to school. There is no right or wrong answer. I am just interested in learning about your first-hand experiences as a college student. I will do my best to keep this interview to no more than 30 minutes and if you have any questions at any point feel free to ask at any time okay? I would like to record this call so that I have an accurate record of your comments, is that all right with you?

You were last on campus for classes yesterday is that right?

Okay I would like to begin by having you walk me through your day yesterday starting from when you woke and continuing until the day ended.

Was that a typical day for you? [If no, probe for differences - “What did you do yesterday that you don’t normally do?” “What did not do yesterday that you normally do?”]

Thank you. Now I’d like you to take a moment and think about the last campus service you’ve needed to use - Do you have something in mind? If no, “Okay take a few more minutes, I’ll wait” If yes,

Okay tell me about that experience -

What was it?

Why did you need to use it?

How was the experience?

Is that typical?

How did you know where to find it?

Thank you. Now I’d like you to take a moment and think about the most recent course-related experience you had that caused you to feel worried or concerned - Do you have something in mind?

Okay tell me about that experience -

Which course was what?

What happened that caused you concern?

What did you do about it?

When you encounter a campus related issue like the one you described, who is the first person you talk to about it?

Why that person? (Or, why don’t talk to people about it?)

What about an issue with your courses like the one you described, who is the first person you talk to about that?

Why do you find that helpful?

Tell me about how you spend your time on campus in between classes?

Tell me about the last time you used the internet for something school related?

Assignments

Tell me about the last time you used social media for something school related?

You were selected to participate in the CQ cohort, so I have a few questions about that. I'm going to ask you about your experience with the platform itself. I had no part in designing it or building it, so you can be completely honest in your opinions. It won't bother me. We'd just like to know what you thought.

Tell me about your experience with the signup process

Where the instructions clear?

Did you know what to do to sign in?

Did you understand why you would use it?

Tell me about your experience moving around the platform

How was it to use?

What kept you from using the platform more often?

Saw two posts, no interaction

What did you like least about using it?

What would you have liked to use it for but could not?

How did you feel about accessing your tutor through the CQ platform?

Would you have preferred to use another social media platform like Facebook or Snapchat?

If interaction

If your college had a mobile app what would you want to be able to use it for?

Well that is all the questions I have for you. We hope to complete all the interviews over the next three weeks. Once they are done we'll be sending the Visa gift cards to the Academic Support Center and contact you to let you know when it's available for you to pick up. Do you have any questions for me?

Then thank you again for your time and have a wonderful rest of your day.

Appendix M: Supplemental Qualitative Questions

Supplemental / Specific questions	Relationship to Quantifiable Measures	Quantitative connection	Vendor Interview Questions	Observation protocol
What factors influence student participation in group tutoring through social media?	Ties to attendance			Identify students in attendance and determine if they are in CQ group
Why do some Students avoid using tutoring or social media academic support?	Who attends	Does this student attend PERKS	“Tell me about the last time you used the internet for something school related”	Describe tutee presence in tutoring session, are they relaxed, engaged, uninterested? What reasons do the tutees attend sessions, remediation, social, confirmation of knowledge?
			What did you like least about using the CQ platform?	
			What kept you from signing up on CQ? OR Why did you decline the invitation to sign up for CQ?	
How convenient was participating in tutoring or communicating via social media to your needs?	What could be easier.	Link to observation form	Take a moment to think about the last time you needed help with something related to school. Do you have something in mind? Okay tell me about that experience? What was it that you needed? Why did you need it at that moment? Did you get what you needed? Was that experience typical? How did you know where to look?	Does the tutee mention ease of attending or difficulties in using tutor interfaces?
				What types of questions do tutees ask? Do they grasp the information or are they still unsure

How comfortable were you in asking questions within the group session, or via social media?	Who participates	Link to observation form	What kept you from making posts on CQ?	How many students ask questions either in a session or online
Which students are more likely to participate in social media approaches to tutoring?	Who uses virtual learning communities		What did you like most about using the CQ platform? What would you have liked to use if for but could not?	Does tutee check cell phone during tutoring sessions?
How effective do you feel the communication from tutors was in supporting your academic needs?	What is working			Do tutees understand feedback when asking a question or use more probing questions to clarify
How comfortable Were you with using social media [CQ] to access tutoring services?		Link to attendance	Describe how you felt about accessing your tutor through CQ? Would you have preferred to use another platform like Facebook or Twitter? Why or why not?	Does tutee refer to use of social media or computer-based resources during session
What factors influenced your visiting /participating in the communication sites, Blackboard or CollegeQorps?		Link to attendance	What about an issue with your courses like the one you described; whom do you talk to about that?	Does tutee vocalize specific reasons for attending this particular session
			Why that person?	
			“Tell me about your experience with the sign-up process: Were the instructions clear?	
			What kept you from logging in to CQ more frequently?	

What benefits do students experience through social media academic support	Tie to Belonging measures		“Tell me about the last time you used social media for something school related?”	Do tutees participate in an isolated fashion or is group interaction established in the tutoring session?
How were your time management habits influenced through tutoring or social media interaction	Tie to belonging measure			Do tutees arrive on time, leave early?
How have your study habits changed over this semester in relation to tutoring or social media interaction		Link to grades	Take a moment and think about the most recent course-related experience you had that caused you to feel worried or concerned – Do you have something in mind? Okay tell me about that experience -	Do tutees mention specific study skills strategies? Referring to notes, flashcards, thinking about test questions etc.
			Which course?	
			What happened that caused you concern?	
			What did you do about it?	
How would you rate your social experience at community college	Tie to belonging measures	Tie to attendance	Tell me about how you spend your time on campus when you are not in class?	Are tutees in groups or are they alone
			Do you have friends at school that you speak to when you're not on campus? If yes, tell me about those conversations are they always school related? If no, why not	

How does academic social interaction impact student study habits and performance	Tie to belonging and grades			
How happy are you with your academic progress this semester		Link to grades	[ADDED TO PRE-INTERVIEW QUESTIONNAIRE]	
What academic support services are most helpful to you as a student				Does tutee mention helpful strategies
How would you describe your PERKS experience to future students in your major	Tie to belonging			Does tutee mention the usefulness of PERKS

Appendix N: Blackboard Posts in Vocational Classes

	Instr emails	Topic	Tutor Email	Topic	Student emails	Topic	Instr Updates	Topic
BUS115 A	0	0	0		0		2	Test reschedule
BUS115 B	1	0	0		0		0	test reminders
BUS115 X	1	Shared student resource	0		0		5	3 office hour change
ACC101 A	1	0	0		0		1	welcome
ACC101 B	0	0	0		0		1	welcome
ACC101 BL	3	Home Work post	0		1	assignment post	0	test reminders
EDU171	0		16	PERKS reminders				
EDU280	0		5	PERKS reminders				
ELT 125All	0		6	PERKS reminders				
ELT132 All	12		0					Course reminders
HLT101 A	5							Course reminders
HLT101 B	0		10	PERKS reminders			1	Welcome
HLT101 C	0		9	PERKS reminders			1	Welcome
HUS100 A	0		7	PERKS reminders				
HUS100 B	0		5	PERKS reminders				
NUR105 All	0		11	Perks reminders	1	Shared resource		
SCI135A			21	PERKS reminder				
SCI135 A1			3	PERKS reminder	1	no content		
Totals 18 class sections	23 Posts in 6 classes		93 Emails in 11 classes		3 posts in 3 classes		11 posts in 6 classes	

Appendix O: Tutee Assessment Rubric

Tutee's Understanding	1 – Beginning	2 – Developing	3 – Proficient	4 – Excellent
Before-During-After <i>Outcome: Before-During-After model</i>	-No preparation, engagement, review for class or tutoring	-Little preparation, engagement, review for class or tutoring	-Some preparation, engagement, review for class or tutoring	-BEFORE: Well-prepared for class and tutoring -DURING tutoring was engaged -AFTER tutoring reviewed material
Study Skills <i>Outcome: Awareness and implementation of study skills</i>	-No awareness of study skills -No implementation of study skills	-Vague awareness of study skills -Little Implementation of study skills	-Some awareness of study skills -Some implementation of study skills	-Aware of study skills and regularly implements study skills
Independence <i>Questions: Tutee comes to session with questions; able to anticipate exam questions. Effort: tutee makes honest effort</i>	- Unclear about what questions need to be asked -Relies on tutor to solve the problem; makes no effort	- Sometimes understands what questions need to be asked -Occasionally relies on tutor to solve the problem; makes some effort	-Usually asks questions on their own before relying on tutor - Sometimes can independently work through complexities of the information	-Consistently asks questions on their own before relying on tutor - Anticipates exam questions -Makes clear effort
Reflection <i>Outcome: tutee is aware of metacognition: knowing yourself and how you best learn</i>	-No self-awareness regarding academic strengths/ weaknesses -Has unrealistic goals	-Little self-awareness regarding academic strengths/ weaknesses - Vague plans to achieve goals	-Some self-awareness regarding academic strengths/ weaknesses - Sets mostly realistic goals	-Consistent self-awareness regarding academic strengths/ weaknesses - Sets realistic goals -Makes concrete, written plans to achieve goals =METACOGNITION

Appendix P: Crosswalk of Major Themes and Archival Data

Data Source	Major Themes				
	Academic Concerns and Strategies	Supportive People and Resources	Effective Communication Practices	Student Technology use	Student Responsibilities that Affect Coursework
Transcripts	Study strategies, response to tutoring,	Professor and advisor help, study labs, library, grant programs	Office hours, face-to-face, weak student ties	Social media, Blackboard, Power Campus, Starfish, email, phone	School schedule, homework, family responsibility, work,
Observations	Low attendance at tutor sessions overall-especially after a test occurred, Focus on review, Feeling better after attending session,	Tutors held regular sessions. Some students shared resources,	Several Sessions Cancelled due to no attendance Weekly reminders sent to all students	Blackboard and CQ reminders sent weekly, some rooms lacked Wi-Fi access, Assisted students with log on problems	Attending tutoring low priority, heavy focus on test prep
Grades	Strong focus	Go to see professor, advisor or tutor if grades are low, study in library	Face-to-face if there was a problem, otherwise check college sites	Reported on Blackboard, Power campus, Starfish	Had to drop a Class to protect GPA, Top and bottom grades don't use tutors, mid grades do attend tutoring
Social Media	FB posts saying grades are up, 27% of FB posts were	FB posts giving support, FB posts asking for support.	Use of social media to form study group,	CQ log on Face Book transcripts Instagram	Mention of sick children or schedule changes

	academic, Content questions				
Starfish	Grades, Kudos, Flags	Kudos Flags		Students check grades, advisors check flags	
Blackboard	Some classes provide grades through BB, Class Content, Inter class Communi- cation	Tutors embedded in BB, Student can post/ask questions but don't	Underused by instructors and students as a communi- cation tool	LMS, available to all classes, not all instructors use BB	Provides syllabus and assignments in some classes
Attendance at PERKS tutoring	Students attend for academic support	Weekly tutor sessions	Weekly reminders on BB and CQ	Use of BB and CQ to post reminders and resources	Voluntary basis
Pirate Polls	Show Preference for academic review	Let tutor know what went well and what students are concerned about	Anonymous feedback on session		

Appendix Q: Observation Data

Scheduled Observation Date	Number of Students present	Observation	Protocol
10/23/2018	1	Worked with student to log on the CollegeQorps, no subsequent log on	Student was alone- office visit. Seemed confused on CQ log on but was not sure why to log on to platform
10/25/2017	1	Tutor helped student to access grades on Blackboard	Student was alone in session
		Student and tutor worked on iPad	Student seemed relaxed but confused
		Student needed clarification on major paper, tutor provided outline structure	Tutor provided feedback on outline format, but students did not respond to shared information with interest
		"I know what I have to do, just not sure how to organize the paper"	Student seemed confident regarding how to write the paper
10/26/2017	2	Small group seated at table, tutor broke down parts of goals.	Two students in attendance
		Students were aware of next tutor session to be held next Monday.	Tutor provided review, students did not generate their own questions
		Tutoring focused on academic topics/ test prep	Students were on time and attentive
		Students mentioned that low attendance due to student conflicts and that most students plan to attend next session	
10/27/2017	0	Session Cancelled	
10/29/2017	19	Review session of nursing blue print for test	Tutors posed questions to generate discuss but students waited for the tutor to answer her own questions
		Students referred to Power point available in Blackboard	Use of materials provided through Blackboard

		Pirate polls collected focused on the benefit of academic review	Students were highly interested in getting test insight and mentioned that in their Pirate polls
		Students sat in small clusters around the room, avoiding front row seats	Students were in small groups 2-3 within the room.
		Only one or two students responded to tutor questions	
		Several student approached the tutor immediately after the session ended to as individual question.	
10/30/2018	0	Session cancelled	
11/03/2018	1	Worked with student to log onto CollegeQorps, he succeeded but never logged on again. Student expressed annoyance at having to log on to yet another account for college purposes.	Student does attend PERKS tutoring. Visited office alone. Student had difficulty using tutor interface (CQ)
11/7/2018	0	Session cancelled	
11/20/2018	0	Session cancelled due to conflict with ATI testing	
12/4/2018	0	Session cancelled	
12/11/2018	0	Session cancelled	
12/15/2018	7	End of semester party, which involved board games and food.	No academic focus, just happy to have semester complete
		Mostly PTECH students and tutors, notification through Blackboard and at tutoring sessions.	
		Students stayed within their cluster groups	

Appendix R: Pirate Polls

Front side






Welcome, how's it going?



1 2 3 4 5

Back side

How'd it go?



1 2 3 4 5

I liked:

Wish I'd said:

Suggestions:

Appendix S: Recruitment/Promotional Material

Peers Engaged in Reinforcing **YOUR** Knowledge & Skills



Join a study system that **prepares** you to **excel** in your classes, gets you **ready** for exams and projects, helps you **keep on track**, and sets you up for **success**!

PERKS are coming your way! This fall XX has trained Perkins Tutors to help YOU succeed and excel in your career classes. We will be introducing you to the program during your first week of classes. Our tutors will work closely with instructors to help you successfully complete your classes and move on to the next semester. Attendance is voluntary but well worth your while! Be sure to take advantage of these **PERKS**! Let me know if you have any questions.

REDACTED

Academic Success Coordinator

REDACTED

xxxxxx@xxx.xxx.edu

xxx-xxx-xxx ext. xxxx

Office xxxxx

Appendix T: Statement of Original Work

The Concordia University Doctorate of Education Program is a collaborative community of scholar-practitioners, who seek to transform society by pursuing ethically-informed, rigorously- researched, inquiry-based projects that benefit professional, institutional, and local educational contexts. Each member of the community affirms throughout their program of study, adherence to the principles and standards outlined in the Concordia University Academic Integrity Policy. This policy states the following:

Statement of academic integrity.

As a member of the Concordia University community, I will neither engage in fraudulent or unauthorized behaviors in the presentation and completion of my work, nor will I provide unauthorized assistance to others.

Explanations:

What does “fraudulent” mean?

“Fraudulent” work is any material submitted for evaluation that is falsely or improperly presented as one’s own. This includes, but is not limited to texts, graphics and other multi-media files appropriated from any source, including another individual, that are intentionally presented as all or part of a candidate’s final work without full and complete documentation.

What is “unauthorized” assistance?

“Unauthorized assistance” refers to any support candidates solicit in the completion of their work, that has not been either explicitly specified as appropriate by the instructor, or any assistance that is understood in the class context as inappropriate. This can include, but is not limited to:

- Use of unauthorized notes or another’s work during an online test
- Use of unauthorized notes or personal assistance in an online exam setting
- Inappropriate collaboration in preparation and/or completion of a project
- Unauthorized solicitation of professional resources for the completion of the work.

Statement of Original Work (Continued)

I attest that:

1. I have read, understood, and complied with all aspects of the Concordia University–Portland Academic Integrity Policy during the development and writing of this dissertation.
2. Where information and/or materials from outside sources has been used in the production of this dissertation, all information and/or materials from outside sources has been properly referenced and all permissions required for use of the information and/or materials have been obtained, in accordance with research standards outlined in the *Publication Manual of The American Psychological Association*

Eldora M. Fosmire

Digital Signature

Eldora M. Fosmire

Name (Typed)

August 21, 2018

Date