

ABSTRACT

Title of Dissertation: COMMUNITY COLLEGE FACULTY &
 TECHNOLOGY:
 INTEGRATING TECHNOLOGY IN FACE TO FACE
 COURSES.

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May 2019

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 Policy

The purpose of this quantitative descriptive study was to evaluate community college faculty use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) as measured by the CCFSSE 2015 cohort survey. Archival data collected by the Community College Faculty Survey of Student Engagement (CCFSSE) instruments were used for the study. These data were collected in the 2015 cohort and included three spring semesters of 2013, 2014, and 2015. The significant finding of this quantitative descriptive study revealed that faculty prefer using face-to-face interaction (lecturing) rather than applying technological methods in the classroom.

Results showed that full-time faculty were more likely to be utilized *Face-to-Face Interaction*, *Online Interaction*, and *Social Networking Technologies* in a freshman seminar or first-year experience than that of part-time faculty who did not use technologies. Results of this quantitative descriptive study also demonstrated that full-time faculty were more likely to use all four modalities in an organized *Learning Community* course rather than that of part-time faculty who did not utilize such modalities. Faculty age made no difference in the use of the four modalities working directly with students in a college orientation despite the difference in their age. Female faculty who employed *Online Interaction* and *E-Learning* were more likely to teach a student success course than male faculty who did not.

Native Hawaiian faculty were more than likely to employ *Face-to-Face Interaction*, while White faculty were more than likely to employ *Online Interaction* in an accelerated course compared to faculty who reported being of another race. Conversely, faculty race made no difference in their use of *E-Learning* and *Social Networking Technologies* in an accelerated course. The results presented in this quantitative descriptive study may help to contribute new information to the education literature about community college faculty integrating technology into the classroom.

COMMUNITY COLLEGE FACULTY & TECHNOLOGY:
INTEGRATING TECHNOLOGY IN FACE TO FACE COURSES

by

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A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

MORGAN STATE UNIVERSITY

May 2019

COMMUNITY COLLEGE FACULTY & TECHNOLOGY:
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DEDICATION

This dissertation is dedicated to my friend JC who supported me through this process and always there to take my call. To my wife, Pamela thank you for being my biggest supporter, and to all my kids who in some way encourage me to do my best. To the memory of my Dad who showed me the importance of helping others and to my mom who supported me from day one buying my first book bag on wheels, I dedicate this dissertation. I also dedicate this dissertation to all my sisters who always believed in me to do great things. I love you all.

ACKNOWLEDGEMENT

I want to thank my committee chair, Dr. Russel Davis who worked with me un-tirelessly to push me across the finish line. I will always remember and appreciate you for the day you sat down with me and spent three hours of your time to make sure my paper was correct to get it through. I also thank and appreciate Dr. Diana Zilberman who said yes to being a member of my dissertation committee even before I knew what direction my research would go. To Dr. Carolyn Anderson who always spoke a kind word to encourage me along the way. Sometimes it was just your smile that made me feel it was going to work out. To Dr. Glenda Prime and Dr. Myrtle Dorsey thanks you for support doing a time I was frustrated, you all encourage me to keep going. To Dr. Rosemary Gillett-Karam who accepted me into the program and helped me through my comps and proposal and supported my research. I also acknowledge and thank Dr. Tiffany Thompson-Johnson for her support with my statistics she gave my dissertation a boost. In to all my cohort members who always wished the best for me. A heartfelt thanks to all of you.

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CHAPTER I: INTRODUCTION

A “widespread investment in technology by community colleges across the country is boosting the image of these two-year schools and making them more competitive with four-year institutions” (Ramaswami, 2009, p. 1). Community colleges are reporting that students returning to their schools are expecting technology-based teaching (AACC, 2016). As technology broadens the scope of community college offerings seem to expand their expectations of those colleges (Ramaswami, 2009).

Researchers (Schaffhauser, 2011; Star, 2014; Young, 2014) explain that not all faculty have embraced the technology requirements, nor have they learned to apply them to teaching. Fear about adopting technology due to the fast pace of software changes in technology has been determined to be a leading cause of faculty reluctance to embrace new technologies (Mercer & Media, 2016; Waldman, 2012). Other factors that may inhibit faculty use include, “faculty values, needs, preparations, economic factors, demographics and others” (Prihoda, 2011 p. 81). Researchers argue that these technologies can be useful and are available for faculty and students (Becking, 2011; Mishra, Koehler, & Henrikson, 2011). They explain that no longer does it seem possible to disregard technology and maintain institutional health (Becking, 2011; Goodman, 2018; O’Banion, 1997).

Community colleges that integrate technology in their curricula can prepare students for the 21st century (Hildebrand, 2009). Researchers, however,

can demonstrate that community college administrators and professional development staff are facing critical issues getting faculty buy-in, perhaps due to a lack of training as faculty have been shown to lack the necessary pedagogical skills to integrate technology in the classroom (*Holum & Gahala, 2001; Mosher, 2007*).

Several areas of educational concern for college faculty include using and integrating technology in the classroom; needed skills and professional development are required for substantive change (*Winston, 2013; Tabata & Johnsrud, 2008; Baker, 2007; Becking, 2011; Kvavik & Caruso, 2005; Funkhouser, 2013; Finch & Rahim, 2011; Goodman, 2018*). These researchers conclude that technology use in instruction can help faculty accomplish their teaching goals and the quality of delivery.

Community colleges are being urged to accommodate the multi-media learning styles of students (born after 1982 and known as digital natives) and should consider a modification in their technology infrastructure and staff development (*Dede, 2005*). Although faculty may determine and choose the use of technology in community colleges there remains some reluctance in their endorsement of technology use in the classroom (*Nakamichi, 2002; Becking, 2011; Raines, 2011*).

The “un use of technology” by community college faculty is the subject of the present study although Norbury explains, “Teachers want to teach, not spend their days figuring out the foibles of various technologies” (2013, p. 2). Community college “stakeholders see the lack of technical knowledge as one of

the biggest challenges to campus technology” (*Twenty-first Century Campus Report*, 2011, p. 17). With this challenge in mind, barriers can be explored to understand and identify faculty use of technology in the classroom.

This quantitative descriptive study sought to explore faculty use of face-to-face interaction, on-line interaction, e-learning, and social networking technologies (known as the four modalities of teaching by CCFSSSE data collection) for integrating technology into their classroom and online courses. This study will make use of ex post facto data collected from the Community College Faculty Survey of Student Engagement (CCFSSE) Cohort 2015 (which include student responses from years 2013, 2014, and 2015).

Theoretical Framework

The theoretical framework refers to the lens that was used by the investigator to explain, evaluate, and assess the findings from faculty as they use face-to-face interaction, on-line interaction, e-learning, and social networking technologies as measured by Community College Faculty Survey of Student Engagement.

The researcher found that most theories of faculty use of technology were in the arena of faculty online practices (Beldarrain, 2006; Moser, 2007; Sibley, 2003), but those online practices did not seem to tell the entire story. Educational processes of merely introducing technology did not provide sufficient information without exploring faculty use and knowledge of technology in the on-site classroom (Kvavik & Caruso, 2005; 2004; Baker, 2007; Mishra & Koehler, 2007).

Therefore, this researcher used Kvavik and Caruso's (2005) theoretical frame of connection (mobile electronic connections), convenience (readily accessible technology and online resources), control (multitasking and customization), and learning (integrating virtual and physical assignments) to guide this quantitative descriptive study in investigating faculty use of technology modalities within the classroom.

These authors (Kvavik & Caruso [2003, 2005]), in addition to providing a framework of connection, convenience, control and learning as factors, also identified six approaches for incorporating information technology into students university experience: (a) integration of IT into curriculum; (b) definition of skills; (c) training for students and faculty common learning environments and (d) consistent instructional approaches; (e) accessible and effective IT service; and (f) support; monitoring and benchmarking.

The CCFSSSE study hones in on the theoretical frame of Kvavik and Caruso (2005) using four of their approaches: a) integration of IT into curriculum b) definition of skills c) training for students and faculty and d) common learning environments and consistent instructional approaches. Kvavik and Caruso offer a framework for examining how IT relates to students' experiences in the classroom. Particular to their frame is answering the question relating to faculty inclusion of IT modalities in the classroom, onsite. Similar studies have been conducted by Baker (2007) and McInerney and Roberts (2004) whose studies looked at faculty use of technology in the classroom from students' perspectives.

Purpose Statement

This quantitative descriptive study explores faculty use of technology in on-site courses at community colleges. The purpose of this study was to evaluate community college faculty use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) as measured by the CCFSSSE 2015 cohort survey. Kvavik and Caruso (2005) studied faculty perceptions for incorporating technology in the classroom. This quantitative descriptive study focused on faculty use of technology modalities using their age, gender, race, years of teaching experience, and full or part-time employment.

Research Design

This study used a quantitative descriptive research design using ex post facto data accumulated by CCFSSSE, University of Texas, Austin. The Community College Faculty Survey of Student Engagement (CCFSSE) provided empirical data from 2013-2015 cohorts from 262 institutions, 40 states, Bermuda and Micronesia, and 31,508 faculty members. The data were used to measure and assess faculty use of technology modalities in their classroom courses. Quantitative research is a way of testing ideas and points in relation to a set of variables (Creswell, 2009). This quantitative descriptive study examined faculty technology modalities use related to CCFSSSE foci on freshmen or first-year students, on organized learning communities, on freshmen enrolled in orientation classes, and on students enrolled in accelerated courses. Various faculty demographics, including race, age, gender, enrollment (full- and part-time faculty), and years of teaching experience, researched.

By using Kvavik and Caruso's (2005) modalities (integration of IT into the curriculum; training for students and faculty; definition of skills; common learning environments and consistent instructional approaches), this researcher was able to focus on the data from the CCFSSSE study to explain variables. Kvavik and Caruso's integration of modalities framed the findings of the study to confirm or deny the use of technology in the classroom by faculty.

Kvavik and Caruso (2005) suggested the need for curriculum and technology use to co-exist. This quantitative descriptive study used six research questions, guided by Kvavik and Caruso's (2005) theoretical framework, and focused on data collected and interpreted from the 2015 CCFSSSE cohort. The central issue of the study focused on the differences in community college faculty on-site use of technology modalities, face-to-face interaction, online interaction, e-learning, and social networking technologies as measured by CCFSSSE 2015 cohort survey (See CCFSSSE survey in Appendix A). Faculty *use of technology* determines how faculty use, or do not use, technology in the classroom (Kvavik & Caruso, 2005). The study does not determine institutional support. The CCFSSSE survey focused on the student-faculty interaction among freshmen (or first-year students) in organized learning communities, in their Orientation sessions, and among accelerated coursework. The research questions reflected the emphases of the CCFSSSE, and IT use among the technology modalities. Terms such as freshman or first-year experience organized learning communities, college orientation, student success course, and accelerated or fast-track course are terms CCFSSSE uses to relate modalities to students characteristics (see below).

Research Questions

Each of the research questions listed below explains the four “uses of technology modalities” (students and first-year experience, students in learning communities, freshmen students and college orientation, students in student-success course, students in accelerated course or fast-track program) and relates to measurements by CCFSSSE (years studied, part or full-time faculty, cohort survey). In all questions, the focus for student use is faculty choice of modalities.

1. What is the frequency in the use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) among community college faculty working directly with students in a freshman seminar or first-year experience?
2. To what degree does the use of technology modalities among community college faculty working directly with students in a freshman seminar or first-year experience and faculty employment status?
3. To what degree does the use of technology modalities among community college faculty working directly with students in an organized learning community and faculty employment status?
4. To what degree does the use of technology modalities among community college faculty working directly with students in a college orientation class and faculty age?

5. To what degree does the use of technology modalities among community college faculty working directly with students in a student success course and faculty gender?
6. To what degree does the use of technology modalities among community college faculty working directly with students in an accelerated course and faculty race?

Scope of Study

The scope of this study was to evaluate faculty use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) in the classroom as measured by CCFSSSE 2015 cohort survey.

Limitations

The quantitative descriptive study was limited to faculty who responded to the CCFSSSE survey from 2013 through 2015. There is a limitation in the sample drawn from the CCFSSSE survey. To some degree, there may exist questionable validity in the respondents answers; however, this is inherent in any self-reporting study (Fraenkel & Wallen, 2000). This quantitative descriptive study was limited to permanent full or part-time faculty who teach at least one credit hour course. This study will not consider community college students, nor institutional interaction. This quantitative descriptive study will only consider full or part-time faculty and independent demographic variables of age, race, gender, instruction course, and teaching experience. This was explored in using the CCFSSSE survey 2015 Cohort that collected data from the years 2013, 2014 and 2015 on

technology use (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) as the dependent variables.

Definitions of Terms

Adoption: Adoption is a decision to make full use of an innovation as the best course of action available (Sulyaningsih, 2010, p. 1).

Course Management: To parallel adoption, course management is a set of tools that enables the instructor to create online course content and post it on the Web without having to handle other programming languages (Ferriman, 2012).

E-learning: E-learning is similar to the experiential model of learning. E-learning is a collection of experimentation on the course software package to understand the concepts and techniques (Arsham, 2013).

Face to Face: Courses taught face-to-face at community colleges generally have specific meeting times equivalent to one hour a week for each lecture credit and two hours for each lab credit. Although the course is taught in a classroom, a D2L (Desire2Learn) online site is part of each class at the community college. Students refer to the course site for the syllabus, posted assignments, grades and other material determined by the faculty to be part of the course (Online.Southcentral.edu, 2018).

Modalities: A term coined by CCFSSSE [2015] that describes the four types of technology used by faculty such as face-to-face interaction, on-line interaction, e-learning, and social networking technologies.

Online Teaching: Online teaching means the separation of teachers and learners communicating via computers to present or distribute some educational

content. This is distinguished from face-to-face education where a computer network may be present and used to convey some educational information. Online teaching occurs when there is two-way communication via a computer network allowing students to benefit from interaction with each other, with teachers, and with staff members (Heindel, 2014).

Social-Networking Technologies: Social networking technologies allow faculty and students to be part of a virtual community. Some of the most used sites are Facebook, Twitter, LinkedIn, Google, YouTube, Instagram/snapshot (Schonfeld, 2008; Moreau, 2016). These websites provide users with quick, simple tools to produce a custom profile with text and pictures. The typical information about the user is fundamental with a few photos and possibly a blog post. Other profiles could include videos (Tech Terms, 2008).

Technology: Instructional technology involves using an assortment of teaching methods to enhance student learning. Examples are PowerPoint presentations, laptops, and other electronic devices. In the virtual or e-learning environment, instructional technology encompasses computer-based courses and online databases (Mongan-Rallis, 2000).

Twenty Fifteen (2015) Cohort: A survey of 31, 508 faculties across 2013, 2014, and 2015 administrations that includes 257 institutions from 39 states, plus Micronesia.

Summary

Chapter I provided a broad introduction and background history of the problem of community college faculty not using technology in the classroom as a

teaching method. Additionally, the background for this quantitative descriptive study discussed the possible benefits of community colleges providing professional training to faculty to increase their use of technology in the classroom. The research questions, significance, limitations, and definitions are indicated.

CHAPTER II

REVIEW OF LITERATURE

History of Technology in the Classroom

Hudnett (2016) reported that personal devices promote student engagement and that Universities have a unique opportunity when they adopt personal electronic devices for classroom instruction. This process has enhanced and improved student engagement in learning. A great deal of commitment, coordination and management exists for college leaders to examine the devices closely for effectiveness and to assure all students have access and that faculty are trained to use the devices effectively. Providing access to all students allows under-privileged and privileged students to have equality in the classroom. Providing student access also creates a learning environment that is more collaborative supporting more class discussion and less lecturing.

Bates (2014) posited, one of the earliest forms of teaching was through folk tales and stories. Technology is far from being a marginal factor but becoming more central in all kinds of instruction. The role of technology in education goes back at least 2,500 years. He further suggested, the progression of American Educational Technology (1990) was the most popular historical account but got lost after 1989. Of course, the military was the first to use any technology for teaching, and in this case, it is no different as they were the first with overhead projectors on a small scale and later to be the first with computer and cell phones.

Bates also suggested, even with all of the technology, many faculty are still lecturing as a first and only choice. Mostly, it is due to the fact that lecturing requires no significant change and now most can be supported by power-points and chalkboards. Technology has not taken over lecturing; it has enhanced it. What technology in the classroom has done is limit the student imagery senses to a more visible observance as simple as watching You Tube. The present digital age educational paradigm shift has created a more rapid pace of technology development. For many, this will be a challenge as well as an opportunity.

According to Boss (2014), Seymour Papert is considered one of the fathers of classroom technology. Boss noted that Seymour Papert collaborated with psychologist Jean Piaget in the 1960s and developed the Logo programming language to help students with learning math. With minimal assistance, they could write programs that controlled a robot. This experience helped them gain a deeper understanding of geometric concepts. Through this process, students were more engaged. Boss further stated that research has revealed when technology is implemented effectively in the classroom, students gain a variety of benefits and expand their knowledge base.

Moltz (2010) reported that the American Association of Community Colleges is encouraging more two-year institutions to internationalize their curriculums and expand their reach around the world. Future trends of the community college show that many of the faculty will be involved globally. Globalization will affect all aspects of teaching and learning. Progressions in

technology will drive continual changes in student lives and offer them new opportunities to enhance and broaden their learning experiences. Technology empowers students to take control of their learning environments (Flynn & Vredevoogd, 2010).

Globalization in the business world has also permitted the implementation of educational technologies that can increase profitable access and facilitate learning beyond the walls of the traditional classroom to reach and invite any student into any classroom around the world (Rajasingham, 2009).

Roblyer and Doering (2010) posited that four historical developments had shaped current technology practices for professional educators. The first development was that of media and audiovisuals which grew out of the movement in the 1930s involving slides and films, which seem more effective than simple lectures and books. The second development, of instructional systems and instructional design, was initiated by post-World War II military and industrial faculty to prepare a large group of personnel quickly. This development provided the use of a more efficient system to create uniforms, useful materials, and training procedures. "There is a belief that both human (faculty) and nonhuman (media) resources could be part of an efficient system for addressing any instructional need" (Roblyer and Doering, 2010 p. 1). The third development involved a great paradigm shift and originated in the 1980s with industry faculty and vocational professors. As a result, vocational training became a practical way of teaching math, science, and language, one which will better prepare students for the work world (Roblyer & Doering, 2010). The fourth and final

development has been the creation of educational technology as computer systems. This 1950s view was thrust in the 1960s as faculty and trainers witnessed how early computers had the potential to assist with instruction. By the 1970s many of the professors were involved in developing computer applications (Roblyer & Doering, 2010). “By the 1990s, educators began to see computers as part of a combination of technology resources, including media, instructional systems, and computer-based support systems” (Roblyer & Doering, 2010, p. 1).

According to Molnar (1997), the first operational classroom computer was the “Mark 1” in 1994 at Harvard University and in 1946 at the University of Pennsylvania. The primary use in mathematics, science, and engineering as a mathematical problem-solving tool. In 1959, the first large-scale projector created was for computers. In 1963, computers were transformed primarily from a research tool to an academic teaching one. Molnar further developed a new computer language. The creation of computer-based instructional material for a wide variety of subjects was developed, and 30 regional computing networks were supported by the National Science Foundation (NSF). Over two million students used computers in their classes by 1974. Molnar concluded, by the 1990s students were using computers to share information globally, and research showed that educational technology when properly applied, could provide an effective means for enhancing learning.

Groff (2013) reported that in less than two decades technology has brought many improvements for education and more importantly empowers teaching. The author further stated that twenty years ago the classroom consisted of a black-boards, television, VCR, and calculators. If there was an internet, it was minimal. Probably the

fax machine was the most internet type of equipment. Now teachers have access to more instruction innervation. As mentioned by Groff schools have whiteboards, tablet PCs, Internet resources, apps, virtual reality devices, and other tools that allow them to reach every student, regardless of learning style. Although all these items may be available, community college faculty do not always use them as the first option. The most significant advantage is schools with enough broadband to let student bring their devices and use them.

Groff (2013) suggested that the growth of technology is a win/win for everyone. Technology has changed how faculty teach by allowing more coaching and providing cohorts an opportunity for collaboration for student projects. Groff believes this opportunity allows faculty to see how students are doing in real time. For the student, it globalizes the classroom. Excitement and enthusiasm can become the norm.

Barriers for Integrating Technology into the Classroom

Becking (2011) theorized that student ability to access technology was proliferating. Thus, she examined faculty experience in integrating technology into their classroom. The researcher found that faculty attitude towards technology determines their frequent use of it in the classroom. Becking also alluded to a gap that exists in community college leaders' attitudes and understanding in providing training for faculty to integrate technology into the classroom.

Bilyk (201) reported that faculty should use various decision-making strategies and develop a course beyond the read-discuss-test paradigm. Planning for integrating technology into the curriculum would do well. Other

approaches to incorporate technology into the class would be to give students assignments that require them to use their own mobile devices to complete. The use of decision-making assignments draws on the participation of the student. Using technology in that decision is closer to student's world views. This will require as the Boettcher (2011) study revealed, the instructor needs to be present at the site. Faculty presence is essential at the site during the open discussion to keep the student focused.

Boettcher (2011) found that there is a lot to learn about teaching and learning, specifically about teaching with technology. In the meantime, the number of students participating in college-level technology courses has increased over all other forms of technology-based distant learning courses (Raines, 2011). This new phenomenon is growing, and the need to incorporate technology in the classroom as a tool for encouraging learning based on seeking and synthesizing is rising. No longer should faculty rely just on one single source like books or faculty lecture (Dede, 2005). Community college students expect to have the opportunity to use the technology that is a part of their daily routine. Barriers exist, however, to faculty acceptance of teaching and learning with technology. Two of them are concerned about "cheating and the quality of the learning experience" (Raines, 2011, p. 80).

Cabellon (2013) the Technology Implementation Model, starts with getting college administrators to acknowledge their bias toward technology integration. The researcher believed starting the conversation from the top can get things moving towards integration. If those who have the authority to create technology

plans do not see the importance, then it most likely will not happen. Allowing the administrators to share their experience will create an attitude for technology inclusion as they are reminded how well it has worked for their own work.

Cabellon posited that administrators holding meetings on this topic will provide an opportunity to discuss barriers for integration in faculty curriculums

Cabellon further suggested that any administrators who do not have experience using technology should spend time doing so to provide them with a personal insight into how helpful it can be. The next step would be for administrators to give other leaders and divisions opportunity to work with the software as well. As other leaders and departments learn the technology systems, another software vendor should be contacted to create a plan that fits the institution. Implementation of software should be a team effort that is consistently reviewing, sharing experiences, and exploring what works and what did not. Finally, the researcher believes that faculty could benefit from following this model; of Acknowledge technological biases; explore personal uses of digital technology; experiment professionally with digital technology tools; share digital technology evidence and ideas; build cross-divisional, innovative partnerships; and develop communities of practice. This model has the best chance to knock down any barriers that would prevent integrations of technology into the college classroom.

Crumbling systems are some of the reasons faculty are apprehensive about using technology in the classroom (Bilyk, 2011). The fast changes in technology, the expense of software license and faculty development have

slowed down its use by faculty. It is important for community colleges to plan for providing the latest technology for staff development (Xu & Jaggars, 2011). Any “virtual curriculums require sound foundation on core knowledge, based on sound, accepted, known pedagogical teaching methods, and flexible enough to accommodate multiple learning styles” (Riedel, 2012, p. 1). Rowley, Lujan & Dolence (1997) stated, “change is not a choice for a college or university; it is a necessity” (p. 18). Many institutions are operating on old models of thinking from early societies, and they fall short in today’s emerging society of increased use in technological pedagogy (Rowley, Lujan & Dolence, 1997). Dee’s (2011) study examined faculty level of preparedness in the use of instructional technology. Hew and Brush (2006) posited that schools struggle to appropriately participate in technology programs because faculty do not have the experience to integrate technology into their curriculum appropriately. They also stated that institutions, IT departments are lacking resources to create a cohesive plan that will produce a learning milieu for students. They further suggest that even if the college had a good system, faculty lack the training to successfully create a syllabus and carry out its requirements without adequate software, internet access, and hardware.

The authors went on to say another barrier that prevents faculty from integrating technology into the classroom is insufficient access to technology caused by limited broad banding and even hardware. They further stated that technology is meaningless if it does not support faculty and students successfully. Often schools lack the funds to be able to train faculty and stay

current with the software updates. Lack of support leaves the faculty with an attitude about the time it takes to do a lesson plan. Therefore, they stick to lecturing.

Mahindravada (2013) suggested faculty lack of confidence, time, training and resources is what keeps them from integrating technology into the classroom. Sometimes it can be the breakdown of equipment occurring too often. Slow running programs also take too much of the class time to use. Lack of training inhibits the faculty's ability to integrate technology in the courses independently. Lack of access and hardware ease of use is also a factor in using technology in the classroom. Some software systems cause confusion and cause long searches at times even to save a file.

Mahindravada further suggested that it is not just time and resources, but faculty do not see the benefit for integrating technology into the classroom any greater than lecturing. The researcher also stated that the institution does not offer any incentive for the faculty to consider using technology in the classroom. Using incentives is vital for colleges just starting a technology program. Incentives help faculty to buy into the program and for it to have the best chance to survive. Finally, Mahindravada research identified that curriculum overload could play a role in hampering the integration of technology in the classroom.

Miller (2013) posited that faculty can get over their fears for integrating technology by becoming partners with their IT departments. The goal of this partnership should be to identify faculty skill levels. Next step would be to develop training for faculty that will address their insufficiency in technology use.

The researcher also suggested that a technology coach should work alongside the faculty until their confidence levels are increased. If necessary, a peer program should be incorporated to further the skill level of individual faculty.

Miller stated, working in small groups would work best as faculty learn how to use technology in the classroom. Periodically, workshops should also be incorporated as the software changes. Any solutions should fix the problem and not create more issues for the end user. Prompt attention should be given to the faculty when the system breaks down. Finally, Miller speculated that lack of faculty appreciation for those who try but fail, hampers integration as well. The researcher suggests celebrating any successful course lesson that allows the faculty to integrate technology.

Ramey (2013) suggested that the most significant barrier to the integration of technology in the college classroom is the lack of professional development and support. As a result, the faculty feel unprepared and unwilling to use technology in the classroom, without the necessary training programs to help them be successful. Ramey suggested integration is further put off when the student knows more than the faculty leaving them feeling inadequate in the classroom. Faculty admit technology would help the student learn better, but when a student gets stuck, and they are forced to be the link between the software and the student, it makes it very difficult when they do not have the answers.

Ramey further posited some faculty knew how to use technology but refused because they do not like change. They are interested in only preparing

for the known pedagogy implementation of lecturing. Faculty with this attitude are not preparing their students to be competitive and further their education or making them marketable in the work field. Finally, Ramey also suggested that faculty attitudes toward integrations play a role in their inability to be innovative or creative in their lesson plans. The result of poor lesson plans blocks the opportunity for the students to experience a 21-century classroom.

Zeches (2011) also studied the faculty's level of preparedness and their IT needs. He identified gaps in faculty training programs and constructed a professional development plan to meet their needs. Zeches did a comparison study of faculty's skills with the International Society for Technology in Education. The study developed national competencies which educational leaders should have to be effective technology leaders in their institutions. Schaffhauser (2011) found that it is not an issue about the faculty's level of preparedness or their professional training and development but, rather, the faculty's willingness to use technology within the classroom.

Funkhouser (2013) examined the pre-service faculty's initial beliefs and ideas about the role of technology in teaching and learning. She also proposed that specific technology-integrated pedagogical strategies have the potential to help pre-service faculty transfer from a traditional instructional approach to a more constructivist student-centered approach. Analysis of post-course grid drawings specified that faculty beliefs began to shift from an only lecture base to a mixed design involving technology.

Goodman (2018) explored technology benefits and problems. The author studied the impact of human cultural reactions to the natural environment when using technology. Goodman described technology as a technique to sharpen student knowledge about significant data concerning figures and facts written from the past. His technology class explores several assertions concerning technology's negative and positive effects on society. Goodman noted that the most challenging issues for technology use are choosing the best-related course material to explore using technology in the classroom.

Twigg (2003) concluded faculty also grapple with the demands of learning new software to prepare digital course materials and that most of the implementation problems faculty encounter have shown to be a result of their unpreparedness. The author also alluded to technology being useful in providing basic instruction and individual assessment that will give way for more time to be spent on the discussion and writing process that could improve student work (Twigg, 2003).

Twigg (2003) further stated faculty who adopt information technology systems that give a quick short test, Readiness Assessment Tests (RATs) in the classroom could quickly identify students' conceptual knowledge and allow more class time to be spent on the academic subject matter that students do not quite apprehend. Community colleges are increasing technology usage in the classroom and are creating hubs where a student can have more flexibility to log on and be a part of the class from various locations.

Ramaswami (2009) posited that community colleges have done very well with asynchronous technology but are trying to grow the synchronous side. The faculty are looking for a form of standardization in their use of technology. If they are required to log differently every day, it slows down their teaching flow, and their students' confidence in their ability is damaged. Support will require patience and skills from the IT technician. Their time spent in the classroom working on the issue should be quick with minimum disruption to the class (Norbury, 2013).

Technology is useful in any course, and community colleges are broadening their vision in many ways while helping students to expand theirs. Many community college students "see the technology, both in the knowledge-base and in course delivery" (Ramaswami, 2009. p. 8-9). Community colleges are trying to grow the synchronous format using several technologies simultaneously. Community colleges are strategizing to increase technology usage in the classroom and growing hubs where a student can have more flexibility to log on and be a part of the class from various locations (Ramaswami, 2009).

Most experts agree that integrating technology into the curriculum is a priority. However, "technology should be integrated, not once-in-a-while but as a tool to promote and extend student learning daily" (Starr, 2011, para. 1). The most challenging issues come from the faculty's lack of personal experience with technology. Moreover, for faculty to incorporate it into their curriculum, they should first learn how to use it (Starr, 2011).

There is a common lament among college and university instructors that technology decisions are adopted without their input, thus ensuring tensions often and fostering distrust between faculty and the IT department (Norbury, 2013, p. 1). Today, faculty interact a little more with technology but believe there are continuing detaches that make it harder for faculty to do a job that they believe lies at the heart of their organization's missions for teaching" (Norbury, 2013).

Faculty Development

Becking's (2011) mixed methods investigation is used in many forms of technology. As noted by Asby (2011), as online courses increase more studies will be formed. Becking's research identified that many faculty are under-prepared, and their use of learning technology is grounded on their educational beliefs. Becking also suggested faculty belief that instructional technology shaped, modeled, and extended learning processes for students. These studies show that faculty view technology as a necessity for their teaching process (pp. 3-4). Faculty under preparedness will make it difficult for them to even explore the value in the lesson plan.

Brown, Crews, and Miller (2009) theorized that teaching students in the 21st century has new inferences for today's classroom at all educational levels. Faculty must be prepared to engaged students through the lens of the twenty-first-century learner. The authors suggest they live in a new age of technology with a cell phone, laptops, PC smartwatches, and social media accounts. Many students are expecting to be taught using tools from their natural environment. Without technology training, faculty cannot meet the demand. The authors asked how faculty are using technology to enhance learning.

Brown, Crews, and Miller (2009) further stated that technology tools are available to faculty, but the availability of time, support, and staff development can defeat the progress. The twenty-first century is a perfect era for developing programs for training and familiarizing faculty with technology. The authors explained that if this training assesses the needs of faculty who want technology

innovation, it will increase the classroom effectiveness for the student, ultimately reducing dropout rates. This can only happen if faculty training meets the needs of the twenty-first technology savvy student.

Conlan, Grabowski, and Smith (2003) indicated that one of the most significant trends that are making an impact in the classroom is the demand for incorporation of technology into the content and delivery of professional development. The authors suggested a professional toolkit for faculty that would help identify the learning styles of diverse students using classroom technology. They further argued that basic design is needed to select appropriate activities for instructional technology.

Egbert, Paulus, and Nakamichi (2002) examined how faculty could continue their professional development concerning technology. The authors looked at factors that influence whether faculty use technology in the classroom. As in other studies concerning faculty use, the authors in this study learned that lack of support and the need for faculty development had hampered efforts at integrating technology into the classroom. Furthermore, the authors measured what faculty were learning in technology courses that can affect how they use technology in the classroom. They concluded that the faculty need to be convinced that technology integration in the classroom has a significant impact on student course success to be confident to use it.

The Egbert, Paulus, and Nakamichi (2002) article filled a gap in the literature concerning faculty professional development. The authors looked at areas where other researchers have been silent concerning technology use in

the classroom. For instance, how and what faculty learn will affect their use of technology in the classroom. The authors found that if the faculty do not see any positive effect on students, they will not change their course material to include the use of technology. They further reported that the faculty learned better in situated contexts and therefore, professional technology development should be taught in the same way. The authors also posited that even when the faculty believe the positive impact technology has on their students, individual faculty still do not know how to apply it.

Hewett, Gibson, Meloncon, Oswal, Olsen, Warnock and others (2011) renowned authors of best practices in writing technology instruction found that a State-of-the-art committee has been working for the last four years developing a best practices statement regarding teaching and learning with technology. The committee identified and examined best strategies using various online media and pedagogies primarily used for instruction and writing in blended, hybrid, and distance-based classrooms, especially in college writing courses. Holum and Gahala (2001) asserted that technology promises to promote literacy; however, some faculty have not been enthusiastic about implementation. She further stated that continuous hands-on training is needed with more practical strategies for its implementation. This process of integration of technology has been slowed due to several obstacles. Moser further suggested that two significant challenges for integration are faculty “buy-in” and funding. These, she believes, can be addressed.

Moser (2007) posited that higher education has challenges getting faculty to use technology because they do not depend on it. He suggested that one of the barriers to faculty integrating technology in face-to-face courses is time. He further stated that any professional training should consider time into the equations of the course. Moser went on to say that faculty incentives will help aid in the technology integration process. Taking this step could prove the college's commitment and support for faculty.

O'Banion (1997) explored the Learner-Centered College to build a strong foundation that can support many new programs and practices. His idea about a "paradigm shift" for community colleges as learning-centered institutions includes a strong foundation with new applications of technology. This new research on learning included adding assessments and outcome measures. The author wrote about the idea of using technology to coordinate a variety of instructional activities, freeing the faculty to facilitate learning. O'Banion wrote this at a time when technology was at a minimum. However, he understood the importance of exploring its use in the classroom as an instructional method. The author's goal was to bring the community college up to speed with the shifting times, using technology for the learners. O'Banion supported the idea that technology plays a significant role in a learner system. He asserted that technology increases the learning experience for the student creating a more vibrant and more diverse information highway.

Schaffhauser (2011) wrote that those who teach faculty are not experienced using technology in the classroom themselves. The author further

discussed that administrators hold retention rates above faculty use of technology in the classroom; therefore, financial support should be the first effort.

Schaffauser further suggested that current empirical data supporting the use of technology in community college classrooms are lacking. The author further noted that there is a gap in the type of technology devices students should use in the classroom. Other empirical data suggested that students should bring their technology devices. However, this process creates broadband issues. The author noted that many students gravitate to the technology-based classes because of their flexibility.

Tabata and Johnsrud (2008) underscored the importance of how distant education success is directly tied to faculty use. The authors explored faculty participation and non-participation in the use of technology. They identified several core issues related to faculty' non-participation. The authors found that faculty have access to technology on and off campus, but participation is still lacking. The researchers noted that faculty use emails and web-based tools for contacting colleagues or performing research, but not in the classrooms for instruction. Tabata and Johnsrud further suggested faculty work and roles have been altered by integrating technology into the classroom. Community colleges are not just competing with state colleges, but private colleges as well, and administrators should explore faculty professional development to support their effectiveness in the integration of technology.

Colleges, Students, and Technology

Chen (2019) discussed a recent report by the 21st Century College

Commission for the Future of Community Colleges. College presidents, non-profit leaders and experts on education policy were some members of the profession on this commission. One of their primary suggestions was for the community college to step up their game for education standards. Chen further posited, the American Association of Community Colleges discussed the need to take the attention off access and focus on student success. The commission stated there is a need for the college to meet the students from their worldview, with lessons that use technology as a part of the pedagogy. A community college cannot be a 21st century school without using technology as a basis for learning.

Garland (2014) posited, for colleges to use technology in the classroom, it would require help from the federal government, especially in urban and rural areas. The author further stated that the college technology programs could put a significant strain on their budgets. However, it is not just school budgets, but for high urban poverty areas, it is a strain on the family budget even to be connected to the internet. Garland further stated that community colleges should be moving ahead but some have scaled back because the internet is too weak and their laptops too old to be used in any helpful way. Garland further stated that 100 megabits of software are needed even to begin to try and incorporate technology in the classroom. However, one gigabit is needed per-second for faculty and students to be online. Presently only one percent of schools meet these requirements.

Guido (2017) discussed twenty-five ways faculty could incorporate technology in the classroom. One of the ways he spoke about was adding short video lessons. For visual learners, it creates a perfect opportunity to engage them. Another exciting way to use technology in the classroom, according to the author, was skyping. Skyping gives the student a chance to speak with the author of the book they are reading, or a chance to speak with experts on a subject they are researching to provide a more vivid understanding. Inviting a guest speaker to share through Skype is a 21st century thinking teaching model, and this is precisely what community college faculty need to invigorate the classroom experience.

Guido (2017) further posited that by using online notepads, slide show comments, and tweets; students could later go back over the essential lesson notes. These electronic notepads also would work well for absent students to catch up on the previous day assignments. Note-pads, slide shows, and tweets allow students to share information making it a more natural method for studying. Guido went on to say, using applications like Survey Monkey and Google to create forms and polls stirs students to participate in classroom discussions. This creates an atmosphere for students to ask questions anonymously without fear or embarrassment, as the class discussion is happening. Finally, the author discussed that solo or group projects could be done in a game format with real-world applicability to faculty lessons. Adding fun to learning is always a win /win.

Mareco (2017) posited that technology is very much a part of the student's culture. Technology can be found where students play and work. So, it should be

involved when they learn, especially since technology at work has become an industry trend. Having it in community colleges prepares the student for work challenges. Marceo further stated that schools are on the fence about technology. The faculty are comfortable with technology like power points and emails, but the faculty seem to be most uncomfortable with mobile devices, thinking they will allow a student the opportunity to cheat. Since most students have and love using their mobile devices, this definitely can make this a tough situation for all. Even for those schools who want to employ technology, their WIFI networks cannot support the technology that faculty would like to introduce for learning. This is unfortunate because if the technology is used correctly, it can help prepare students for their careers (Marceo, 2017). Faculty that introduce virtual reality into the classroom instruction is one example the author discussed can enhance learning and create new opportunities. Allowing students to have access to the most current information for their research affords real-life examples. Marceo pointed out that the tradition of lecturing is broken, but the use of technology can help faculty to become more inspiring and fix the broken system.

According to Sander (2015), students who are growing up in this technology-driven world expect the same from their school. The student does not want to read an entire book to get answers for a research project; they instead would google it. Students want a classroom that uses resources that are from their world lens. Although lecturing works, it is not as enthusiastic as seeing a video. Video watching can open the window for creative learning. Students

already carry smartphones in their pockets. These devices are nothing more than small computers. If students can bring their mobile device for lessons and group work, they are much more likely to be engaged.

Students are empowered when they can have an impact on their learning experience and more than likely gives them a sense of pride and achievement. To keep the student focused, faculty can turn on specific search features on the web as well as stay close by to help with content that is appropriate for the lesson. Pairing students up or using other collaborating assignments for classroom interaction is much smoother, and technology makes that happen. Sander went on to say that teachers should not be nervous about bringing twitter and facebook into the classroom.

According to Yi (2016), faculty should discover what students do on their phones and from that create a similar way to learn. Presently, many students use their mobile devices to stay organized. Faculty could use students' activities on their mobile devices like keeping organize and have student research studies about gaps in organizing. YI also discussed how students use their phones for note taking, and then those notes can be transferred to other devices. This will keep the student engaged and active during the lesson even when they are away from the classroom (YI, 2016).

Yi further suggested, focus groups are often discovered through social media, messaging that pops up while the student is on a device. Special event reminders and safety alerts are only a few reasons to allow students to use their devices in the classroom. Under the school's control, relevant newsworthy

campus information should be the focus and schools should not send unwanted information that would cause a student to block them. Unwanted information is another reason to monitor social media for any serious harmful conversations being shared by students. If this occurs, a college could then quickly take it down. However, the author also posited another benefit for social media is that it helps new students find their way around campus.

Williams (2015) suggested that college students want their classrooms computer savvy. He stated this allows students to save money from having to buy textbooks and gives students more time to improved their homework assignments. For students to be successful and to experience a supportive technology class, the author reported that faculty would have to know how to use it well and in transformative ways. Williams further stated that faculty using only Power-points and Microsoft Word may not be using technology to its full potential as a teaching tool. For many faculty that is as far as they can go. Many faculty are not prepared to use technology beyond Power-points and Microsoft word due to their unpreparedness for its use. As the author alluded to, faculty are not comfortable teaching lessons using technology where their students will be smarter at using technology. This makes faculty fear they will lose credibility with their students.

Theoretical Framework

Kvavik and Caruso (2005) examined the technological skills, usage patterns, and preferences of students for technology in the classroom. Their study found that information technology in the higher education experience

provides convenience, connection, and control for students. They also discovered that students have a copious amount of technology equipment and found it convenient to communicate with faculty and classmates. This connection allowed the students to study and work on class assignments together. They also reported that when IT is in a student's curriculum, it gives them more control of their learning and enhances their knowledge.

Kvavik and Caruso (2005) identified six areas for incorporating information technology into the student's university experience. They are integration of IT into curriculum; definition of skills; training for students and faculty common learning environments and consistent instructional approaches; accessible and useful IT service; support; monitoring and benchmarking. Kvavik and Caruso (2005) undertook a study sponsored by the Educause Center for Applied Research (ECAR).

This study focused on the significant findings from the CCFSSSE study that honed in on the theoretical frame of Kvavik and Caruso from only four of their approaches: a) integration of IT into curriculum; b) training for students and faculty; c) definition of skills and d) common learning environments and consistent instructional approaches.

Integration of IT into Curriculum. Kvavik and Caruso (2005) see the integration of IT into the curriculum as a significant part of the make-up of the classroom. They posited that professionals and governments have redefined the competencies required of professionals and technology skills are now a vital part of a resume. This type of change in the work world can lead to policy changes in

the community college and affect faculty skills level, usage patterns, and preferences for using technology in the classroom.

Training for Students and Faculty. Kvavik and Caruso (2005) see training for students and faculty in programs developed to design faculty training once their skill levels, usage patterns, and preferences for using technology in the classroom are identified. These training programs should afford faculty more innovative technology use besides power-point and course management systems.

Definition of Skills. Kvavik and Caruso (2005) noted that the definition of skills as a warranted process is more worldwide usage and understanding of technology. This involves promoting a new set of skills to be established based on existing faculty skills level, usage patterns, and preferences for using technology in the community college classroom.

Consistent instructional Approaches and the Common Learning Environment. Kvavik and Caruso (2005) suggested consistent instructional approaches as a standardized set for faculty skill levels, usage patterns, and preferences for using technology in the classroom.

The logic behind choosing four out of six modalities from the Kvavik and Caruso (2005) study was to focus on concepts relevant to faculty concerns relating to preferences for employing technology in the classroom. Kvavik and Caruso's (2005) research was limited to perceptions of students in the classroom and a small percentage of community college facilities. If community colleges understand faculty use of technology use (face-to-face interaction, on-line

interaction, e-learning, and social networking technologies) as measured by Community College Faculty Survey of Evaluation, these institutions may be able to encourage further faculty adoption of technology in the classroom (Butler & Sellbom, 2002). Thus, the findings of this study will be useful to community colleges in developing strategies and providing useful professional training where warranted and as technology software changes.

Independent Variables

Age. Doherty (2012) reported that adult learners (25+) are more refined than their younger counterparts and they profit from authentic examples. However, they are not as technology savvy as their younger counterparts. To provide effective technology assistance to older faculty, administrators should investigate reception issues (Vander Kaay, 2007).

Race and Gender. As reported by Sanders (2005), Black students have less opportunity for accessing a computer at home and in some instances in schools that are in more impoverished areas than others. Sanders went on to say there is no clear path or reason to explain why there is a difference in computer use between male and female based on culture. Computer language terms like “hard disc, hard drive, reboot, cold boot, hits, permanent fatal error, and so forth” scare women from aggressively working on computer problems (Sanders, 2005, p. 6). However, this male dominance becomes obsolete as more women are increasing their use of computers (Sanders, 2005).

Dependent Variables

On-line interaction. McInnerney and Roberts (2004) wrote that students could feel isolated during an online course when there is no interaction from the faculty. They discussed the importance of how interaction with faculty could lead to a successful path for students, and in the same manner, little interaction by faculty can lead to an unsuccessful path. They talked about three protocols: “(1) Greater use of synchronous communication (2) the deliberate design and inclusion of a ‘forming’ stage incorporated as an essential component into the course structure, and (3) a greater emphasis on the provision of adherence to guidelines for successful online communication” (p. 73).

E-learning. E-learning is similar to the experiential model of learning. Computer-assisted learning is experimentation on the course software package to help students understand complex concepts (Arsham, 1994-2013). Arsham further stated that learning is achieved when we immerse ourselves and are pushed to perform. He found that the present way faculty help their students to gain knowledge and skills has nothing to do with the way they learn because many of those faculty rely on tests and lectures that students must remember. Arsham believes we learn by doing and practicing. E-learning provides that opportunity.

Social Networking Technologies. Berg, Berquam, and Christoph (2007) stated that social networking technologies are together, one way to build better relationships with students and with personnel from different parts of the campus. It all started with social networking technologies such as Facebook and My

Space. The authors reported that social networking is a way to improve the delivery of services such as enrollment, campus communications, e-learning, advising, and involvement activities. This type of sharing allows campus professionals to take advantage of the benefits of social networking technologies.

Summary

This literature review highlighted the fact that the faculty do not use technology frequently. The consensus in some recent surveys has explained that less than 10% of faculty are using it despite ownership by over 50 percent among college students (Chronicle, 2010; O'Banion, 1997; Starr, 2012). Schools frequently have ignored the large capacities computers have for instructional support, isolating them from the learning process rather than integrating them into all areas of the curricular (Rakes, Fields, & Cox, 2006; Egbert, Paulus, & Nakamichi, 2002). The faculty have the opportunity to transform teaching and learning using technology. This transformation will remain a slow process unless the faculty begin to use it (Duncan, 2010; Miller, 2010; O'Banion, 1997; Williams, 2011). This literature review noted several possible reasons, faculty lack of experience, support, and time to be technology creative in their lesson plan. However, little data reveal faculty preference for using technology based on faculty demographics of age, gender, year of experience and employment status. Identifying faculty use of technology modalities (Face-to-face interaction, On-line interaction, E-learning, and Social networking technologies) in the classroom as measured by CCFSSSE 2015 should help to identify gaps in the understanding of the use of technology in a community college classroom. Kvavik and Caruso

(2005) suggested consistent instructional approaches as a standardized set for faculty skill levels, usage patterns, and preferences for using technology in the classroom. Arnold (2018) reported that more millennials are turning to the internet versus coming to brick and mortar buildings for their education. Arnold further suggested, and this literature review also noted, the reason behind their choice stems from colleges holding on to the lecture model as the standard teaching method. This does not make the college look attractive to millennial students, especially those who are entering straight from secondary higher education institutions and who have mobile devices in their hands. Millennials do attend community colleges with a contemporary worldview of technology, but the faculty's choice of teaching method does not include technology. It is a cultural shock for them and faculty are not able to maintain their attention. Their success is in this course could be troublesome because of it.

CHAPTER 3: METHODOLOGY

This quantitative descriptive study examined the use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) among faculty teaching at community colleges as measured by the CCFSSSE 2015 cohort survey (CCFSSE). Discussed here are the fundamentals of the research methodology including the research design, the population, and participants used in the study, the instrumentation, the data collection procedures, and the data analysis process.

The researcher conducted a quantitative descriptive study using ex post facto data collected from the Community College Faculty Survey of Student Engagement (CCFSSE). Survey research provides a quantitative picture of trends, attitudes or opinions of a population (Creswell, 2009). The Community College Faculty Survey of Student Engagement (CCFSSE) is offered as a companion to the student survey, Community College Survey of Student Engagement (CCSSE, 2003-2018).

Both surveys were conducted by the Center for Community College Student Engagement at the University of Texas at Austin in response to the need by professionals in the field of community college research to understand the skills set of faculty. The CCFSSSE was first piloted in 2004 with 39 community colleges in 22 states. This provided feedback on the clarity of instruction. Since 2004, almost five hundred community colleges nation-wide have participated in the CCFSSSE. To ensure a level of reliability, CCFSSSE reduced duplicate

responses by insisting instructors apply the survey to only one course and use an e-mail address verification system. The Community College Faculty Survey of Student Engagement (*CCFSSE*) draws information from faculty about their instructional practices, how they spend their time professionally both in and out of class, and their thoughts regarding student educational experiences (*CCFSSE* Survey FAQs, 2015).

This quantitative descriptive study was based on the 2015 *CCFSSE* Cohort. The following dependent and independent variables will be evaluated using six research question to investigate faculty technology use in the classroom by exploring differences in the use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) among faculty teaching at community colleges as measured by *CCFSSE* 2015 cohort survey guided the research questions.

Research Questions and Null Hypotheses

1. What is the frequency in the use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) among community college faculty working directly with students in a freshman seminar or first-year experience?
2. To what degree does the use of technology modalities among community college faculty working directly with students in a freshman seminar or first-year experience and faculty employment status?

H₀₁: There is no relationship in the use of technology modalities among community college faculty working directly with students in

a freshman seminar or first-year experience and faculty employment status.

3. To what degree does the use of technology modalities among community college faculty working directly with students in an organized learning community and faculty employment status?

H₀₂: There is no relationship in the use of technology modalities among community college faculty working directly with students in an organized learning community and faculty employment status.

4. To what degree does the use of technology modalities among community college faculty working directly with students in a college orientation and faculty age?

H₀₃: There is no relationship in the use of technology modalities among community college faculty working directly with students in a college orientation and faculty age.

5. To what degree does the use of technology modalities among community college faculty working directly with students in a student success course and faculty gender?

H₀₄: There is no relationship in the use of technology modalities among community college faculty working directly with students in a student success course and faculty gender.

6. To what degree does the use of technology modalities among community college faculty working directly with students in an accelerated course and faculty race?

H₀₅: There is no relationship in the use of technology modalities among community college faculty working directly with students in an accelerated course and faculty race.

Research Design

A quantitative descriptive research design, using ex post facto results, was used to conduct this investigation. The intent of this quantitative descriptive study was to evaluate the use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) of the community college faculty as measured by the CCFSSSE 2015 cohort survey. In a quantitative approach, the researcher will test a theory by a narrow hypothesis and the collection of data to support or refute the hypothesis (Morse & McEvoy 2014).

The data are collected on an instrument that measures attitudes, and the information is analyzed using statistical procedures and hypothesis testing (Creswell, 2009, p. 16). A quantitative analysis relies on the use of carefully constructed research questions and hypotheses that help to focus the purpose of the study. A hypothesis is a “prediction a researcher makes about the expected variable relationships among variables. They are numeric estimates of population values based on data collected from samples” (Creswell, 2009, p. 132).

Population and Sample

This quantitative descriptive design study is based on survey responses using the Community College Faculty Survey of Student Engagement completed by faculty at community colleges who were teaching at least one credit hour

course during spring of 2013, 2014, and 2015. “If a faculty member teaches more than one credit course, the center randomly selects one of them and asks the faculty to think about that course while completing the survey. Using this random selection process limits respondent bias” (CCFSSE Survey FAQs, 2015, p. 2). Community College Faculty Survey of Student Engagement (CCFSSE) took this step to improve reliability and to reduce the effects of any one state group (CCFSSE Survey reports, 2015). The final tally of 2015 cohort faculty participants is 31,508 (useful sample). A cohort represents three consecutive spring semesters (2013, 2014, 2015). The sample that was provided for the current study consists of 26,631 faculty who took part in the CCFSSE survey.

Instrumentation

The instrument that was used in this study is from the Community College Faculty Survey of Student Engagement (CCFSSE) that was completed during the spring of 2015. The instrument was developed electronically and “faculty log into the survey using a unique access code provided by the Center” (CCFSSE Survey reports, 2015, p. 2). The survey had 66 questions and took participants 20-25 minutes to complete. Participants were given a five-point Likert-type scale for answering some questions with a range from 0 (*do not know*) to 4 (*very often*). The 2015 CCFSSE Cohort includes 257 institutions from 39 states, plus Micronesia.

The Community College Faculty Survey of Student Engagement (CCFSSE) “was completed by 31,508 faculties across 2013, 2014, and 2015 administrations” (CCFSSE Survey reports, 2015, p. 1). There were 23,631

participants who answered the specific question for this study. The demographic characteristics that were measured by the survey included age, gender, race, faculty enrollment (full or part-time) and teaching experience-independent. For the purposes of this dissertation, four dependent factors (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) and five independent modalities related to faculty representation (age, gender, race, faculty enrollment (full or part-time) and years of faculty teaching experience).

Questions 21-25 of the CCFSSSE 2015 cohort survey allowed community college faculty to identify the way in which they were involved for each of these seven questions: Planning/designing; coordinating/supervising; teaching/facilitating; advisement/referring students into the experience; training faculty; training or mentoring student tutors; and I am not involved. The responses were reported using a scale of 0 = no response and 1 = response, except for the faculty employment status question which the response scale was 1 = part-time and 2 = full-time. This study only considered data from faculty who selected *teaching and facilitating* (first-year experience, organized learning communities, college orientation, student success courses, and accelerated courses) in answering their use of the four technology modalities: a) face-to-face interaction; b) on-line interaction; c) e-learning, and d) social networking technologies.

Data Collection

The researcher used archived data collected by the Community College Faculty Survey of Student Engagement (CCFSSE) for this study. The data

collected in the 2015 cohort included three spring semesters of 2013, 2014, and 2015 nationwide community college participants. Appropriate permission to gain access and use of the data from 2015 cohort was sought and approved by the Community College Faculty Survey of Student Engagement (CCFSSE) on October 30, 2016.

Data Analysis

The researcher used the Statistical Package for the Social Sciences v.23 (SPSS) for his analysis survey of the usage of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) of the community college faculty as measured by the CCFSSE 2015 cohort because the statistical analysis software package is a “popular tool that is easy to use. It was developed in 1968 and has since been used extensively in industry and university research applications due to the basic capability of descriptive statistics, regression and others” (statistics solutions, 2009, p. 1).

In this quantitative descriptive study, descriptive statistics were utilized to classify and summarize demographics of the faculty. Frequencies were employed using mode and percentages, were employed for research question one to ascertain which of the four modalities of freshman seminar or first-year experience the faculty used most frequently. Inferential statistics, utilizing Phi Coefficient (ϕ) and Chi-square statistics were used. Phi Coefficient was conducted to answer research questions two, three, and five on whether a relationship exists between the dependent and independent variables. Phi

coefficient, as Kolawole (2001) pointed out, is a Pearson product-moment coefficient that is conducted on two nominal-dichotomous variables where both variables are categorical and are coded as 0 and 1. It simply measures the degree of association between two variables. Phi coefficient range represents perfect inverse and direct association from -1 to +1 (Lang & Secic, 2006). Rea and Parker (1992) suggested range for Phi coefficient relationships are none to negligible (.0 to .09), weak (.10 to .19), moderate (.20 to .39), relatively strong (.40 to .59), strong (.60 to .79), or very strong (.80 to 1.0). Finally, Chi-square was conducted to answer research questions four and six on whether a relationship exists between the dependent and independent variables. The data analysis schema is illustrated in Figure 1.

Research Questions	Hypothesis	Independent Variables	Dependent Variables	Statistical Procedure
1		First-year Experience [(FYE), 1=Yes]	Four Modalities of FYE <ul style="list-style-type: none"> • Face-to-face interaction [0=No, 1=Yes] • On-line interaction [0=No, 1=Yes] • E-learning [0=No, 1=Yes] • Social Networking Technologies [0=No, 1=Yes] 	Frequencies: <ul style="list-style-type: none"> • Mode • Percentages
2	H ₀₁	FYE [1=Yes] Faculty Employment Status <ul style="list-style-type: none"> • Part-time • Full-time 	Four Modalities of FYE	Phi Coefficient
3	H ₀₂	Organized Learning Community [(OLC), 1=Yes] Faculty Employment Status <ul style="list-style-type: none"> • Part-time • Full-time 	Four Modalities of OLC	Phi Coefficient
4	H ₀₃	College Orientation [(OR), 1=Yes] Age	Four Modalities of OR	Chi-Square
5	H ₀₄	Student Success Courses [(SSC), 1=Yes] Gender	Four Modalities of SSC	Phi Coefficient
6	H ₀₅	Accelerated Courses [(ACC), 1=Yes] Race	Four Modalities of ACC	Chi-Square

Figure 1. Data Analysis Schema.

Summary

Chapter three included the methodology process for examining the use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) existing among faculty teaching at community colleges as measured by the Community College Faculty Survey of Student Engagement. The instrument the author used is 2015 cohort data (which includes the years 2013, 2014, and 2015) from CCFSSE to measure the responses from faculty. The author analyzed the data utilizing the Statistical Package for the Social Sciences v.23 (SPSS) to test the usage of technology modalities. This chapter identified the independent and dependent variables that led to this research. To help readers understand the sample and demographic studied, the population and its size are discussed. The sample was researched with a design that tests a theory by narrow hypothesis and the collection of data to support or refute the hypothesis using a quantitative analysis approach (Creswell, 2009, p. 132).

CHAPTER 4: DATA ANALYSIS AND FINDINGS

This chapter is an analysis of the user choice of the four technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) as measured by CCFSSSE 2015 cohort survey. The participants were Community College Faculty who were teaching at least one credit hour course during the spring of 2013, 2014, and 2015, completed during the spring of 2015.

The survey had 66 questions and asked that participants take 20-25 minutes to complete. Participants were given a five-point Likert-type scale for answering some questions with a range from 0 (*do not know*) to 4 (*very often*). The 2015 CCFSSSE Cohort includes 257 institutions from 39+ states. The final tally of 2015 cohort faculty participants' data was less than the original figure (23,000/31,000) because all faculty did not answer the technology question from the survey. Faculty response (see appendix A) was recorded as 0 (no answer) or 1 (Answer)

Permission request (see appendix B), for the results from CCFSSSE was granted (see appendix C). The results were sent to this researcher in an excel spreadsheet along with a faculty demographic characteristic code sheet. No participant names or their associated colleges were sent in the data. Any blocks that were left blank in the survey SPSSv.23 counted as valid but missing. In some cases, the total number included valid missing data.

Demographic Characteristics

The sample population for this study consisted of 23,631 faculty members. Most of the faculty in this study were female (56%), White (78%), and 50 to 64 (43%) years of age. Table 1 presents the faculty characteristics.

Table 1.

Faculty Demographic Characteristics

Variables	No.	Percent
Gender		
Male	9251	44.1
Female	11717	55.9
Age Range		
22-24	60	.3
25-29	688	3.3
30-39	3637	17.3
40-49	5043	24.0
50-64	9006	42.9
60+	2549	12.1
Race		
American Indian	173	.8
Asian	808	3.9
Black or African American	1497	7.2
Hispanic	1149	5.5
Native Hawaiian	14	.1
Other	870	4.2
White	16289	78.3

Note: Some participants did not disclose their gender (2,663), age range (2,648), or race (2,831).

In Table 2, the majority of the faculty respondents were full-time (53%), instructors (51%), with a master's degree (65%), and 10 to 19 years of teaching experience (31%). Faculty respondents reported that there was no tenure system (35%) at their institution.

Table 2.

Faculty Academic Profile

Variables	No.	Percent
Employment Status		
Part-time	11006	46.6
Full-time	12625	53.4
Faculty Degree		
Other	376	1.8
Associate Degree	839	4.0
Bachelor's Degree	1916	9.1
Master's Degree	13809	65.4
Doctoral Degree	3539	16.8
First Professional Degree	623	3.0
Tenure Status		
No Tenure System at Institution	7208	34.7
Not on Tenure Track	6843	33.0
On Tenure Track	1550	7.5
Tenured	5165	24.9
Years of Teaching		
<1 year	818	.8
1-4	3294	3.9
5-9	4905	7.2
10-19	6607	5.5
20-29	3693	.1
30-39	1395	4.2
40+	411	78.3
Academic Rank		
Other	1189	5.6
Lecture	492	2.3
Instructor	10768	51.1
Assistant Professor	1819	8.6
Associate Professor	2350	11.1
Professor	4474	21.2

Note: Some participants did not disclose their tenure status (2,865), academic rank (2,539) degree (2,529), or years of teaching experience (2,508).

Frequencies of Freshman Seminar or First-year Experience

RQ1: What is the frequency in the use of technology (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) among community college faculty working directly with students in a freshman seminar or first-year experience?

Frequencies were employed, using mode and percentages, to establish which of the four modalities of freshman seminar or first-year experience the faculty used most frequently. There were 3,451 faculty members who reported teaching or facilitating a freshman seminar or first-year experience (FYE). In looking at the mode and percentage, it was found that *Face-to-Face Interaction* (94%, $M_o = 1$) was the most used modality among faculty working with students in a freshman seminar or first-year experience. Table 3 presents descriptive findings.

Table 3.

Descriptive Statistic on the Use of Technology Among Faculty in a Freshman Seminar of First-year Experience

Description	<i>N</i>	%
Face-to-Face Interaction		
No	169	6%
Yes	561	94%
Online Interaction		
No	169	67%
Yes	561	33%
E-Learning		
No	169	72%
Yes	561	28%
Social Networking Technologies		
No	428	91%
Yes	177	9%

Faculty Employment Status and Students in freshman or first-year experience

RQ2: To what degree does the use of technology among community college faculty working directly with students in a freshman seminar or first-year experience and faculty employment status?

A two-way contingency table analysis, employing Phi coefficient, was conducted to evaluate if an association exists between faculty employment status (no = 0 and yes = 1) and the modalities of FYE (no = 0 and yes = 1).

Phi coefficient found relatively weak positive associations with faculty employment status and the three out of the four modalities of FYE (*Face-to-Face Interaction*, $\phi = .053$, $p < .01$, *Online Interaction*, $\phi = .076$, $p < .001$, and *Social Networking Technologies*, $\phi = .044$, $p < .01$).

For *Face-to-Face Interaction*, the finding suggests that full-time faculty (2138, 95%) were more likely to employ *Face-to-Face Interaction* than part-time faculty who did not (91, 8%), working directly with students in a freshman seminar or first-year experience. The Null Hypothesis was rejected.

Regarding *Online Interaction*, the finding suggests that full-time faculty (791, 35%) were more likely to employ *Online Interaction* than part-time faculty who did not (868, 72%) when working directly with students in a freshman seminar or first-year experience. The Null Hypothesis was rejected.

Finally, regarding *Social Networking Technologies*, the finding suggests that full-time faculty (216, 10%) were more likely to employ *Social Networking Technologies* than part-time faculty did not (1117, 93%) when working directly

with students in a freshman seminar or first-year experience. Thus, the Null Hypothesis was rejected. Conversely, there was no association found between faculty employment status and *E-Learning*, $\phi = .024$, $p = .151$; thus, the Null hypothesis was retained. Table 4 presents the Phi coefficient results.

Table 4.

Phi Coefficient Results on Faculty Employment Status and the FYE Modalities

	Faculty Employment Status	
	Part-Time	Full-Time
Face-to-Face Interaction		
No	91 (8%)	112 (5%)
Yes	1110 (92%)	2138 (95%)
Online Interaction		
No	868 (72%)	1459 (65%)
Yes	333 (28%)	791 (35%)
Social Networking Technologies		
No	1117 (93%)	2034 (90%)
Yes	84 (7%)	216 (10%)

Note. Results for *Face-to-Face Interaction*, $\phi = .053$, $p = .010$, *Online Interaction*, $\phi = .076$, $p = .000$, and *Social Networking Technologies*, $\phi = .044$, $p = .010$. Column percentages in parentheses.

Faculty Employment Status in an Organized Learning Community

RQ3: To what degree does the use of technology among community college faculty working directly with students in an organized learning community and faculty employment status?

A two-way contingency table analysis, employing Phi coefficient, was conducted to evaluate if an association exists between faculty employment status (no = 0 and yes = 1) and the four modalities of an organized learning community ([OLC], no = 0 and yes = 1). There were 2,985 faculty who reported teaching or facilitating an OLC. Phi coefficient found relatively weak positive associations with faculty employment status and the four modalities of OLC (*Face-to-Face Interaction*, $\phi = .075$, $p < .001$, *Online Interaction*, $\phi = .079$, $p < .001$, *E-Learning*, $\phi = .068$, $p < .001$, and *Social Networking Technologies*, $\phi = .041$, $p < .05$).

For *Face-to-Face Interaction*, the finding suggests that full-time faculty (1939, 97%) were more likely to employ *Face-to-Face Interaction* than part-time faculty who did not (91, 8%), working directly with students in an organized learning community. In terms of *Online Interaction*, the finding suggests that full-time faculty (748, 37%) were more likely to employ *Online Interaction* than part-time faculty who did not (691, 71%) when working directly with students in an organized learning community.

For *E-Learning*, the finding suggests that full-time faculty (671, 33%) were more likely to employ *E-Learning* than part-time faculty who did not (716, 73%) when working directly with students in an organized learning community. Finally, regarding *Social Networking Technologies*, the finding suggests that full-time faculty (208, 10%) were more likely to employ *Social Networking Technologies* than part-time faculty who did not (901, 92%) when working directly with students in an organized learning community. Thus, the Null Hypothesis was rejected. Table 5 presents the Phi coefficient results.

Table 5.

Phi Coefficient Results on Faculty Employment Status and the OLC Modalities

Face-to-Face Interaction	Faculty Employment Status	
	Part-Time	Full-Time
No	66 (7%)	69 (3%)
Yes	911 (93%)	1939 (97%)
Online Interaction	Part-Time	Full-Time
	No	868 (72%)
Yes	333 (28%)	791 (35%)
E-Learning	Part-Time	Full-Time
	No	868 (72%)
Yes	333 (28%)	791 (35%)
Social Networking Technologies	Part-Time	Full-Time
	No	1117 (93%)
Yes	84 (7%)	216 (10%)

Note. Results for *Face-to-Face Interaction*, $\phi = .075$, $p = .000$, *Online Interaction*, $\phi = .079$, $p = .000$, *E-Learning*, $\phi = .068$, $p = .000$, and *Social Networking Technologies*, $\phi = .044$, $p = .010$. Column percentages in parentheses.

Faculty Age and College Orientation

RQ4: To what degree does the use of technology among community college faculty working directly with students in a college orientation and faculty age?

Chi-square tests were performed to compare faculty age and the four modalities of college orientation ([OR], no = 0 and yes = 1). There was 2,387

faculty who reported teaching or facilitating an OR. The Chi-square test found statistically no significant difference between faculty age and the four modalities of college orientation (*Face-to-Face Interaction*, $\chi^2(4, 2387) = 3.588$, $p = .465$, *Online Interaction*, $\chi^2(4, 2387) = 1.364$, $p = .850$, *E-Learning*, $\chi^2(4, 2387) = 8.105$, $p = .088$, *Social Networking Technologies*, $\chi^2(4, 2387) = 8.303$, $p = .081$). Thus, the Null hypothesis was retained. No-table was generated due to nonsignificant results. Table 6 presents the Phi coefficient results.

Faculty Gender and Student Success Courses

RQ5: To what degree does the use of technology among community college faculty working directly with students in a student success course and faculty gender?

A two-way contingency table analysis, employing Phi coefficient, was conducted to evaluate if an association exists between faculty gender (Male = 0 and yes = 1) and the four modalities of student success course ([SSC], no = 0 and yes = 1). Phi coefficient found relatively weak positive associations with faculty gender and the three out of the four modalities of SSC (*Online Interaction*, $\phi = .076$, $p < .001$, and *E-Learning*, $\phi = .042$, $p < .05$).

For *Online Interaction*, the finding suggests that female faculty (550, 36%) were more likely to employ *Online Interaction* than male faculty who did not (794, 73%) when working directly with students in a student success course.

Concerning *E-Learning*, the finding suggests that female faculty (424, 28%) were more likely to employ *E-Learning* than male faculty who did not (828, 76%) when

working directly with students in a student success course. The Null hypothesis was rejected.

Conversely, there were no associations found with faculty gender and two of the four modalities of SSC (*Face-to-Face Interaction*, $\phi = -.010$, $p = .615$ and *Social Networking Technologies*, $\phi = .019$, $p = .336$); thus, the Null hypothesis was retained. Table 6 presents the Phi coefficient results.

Table 6.

Phi Coefficient Significant Results on Faculty Gender and the SSC Modalities

	Gender	
	Male	Female
Online Interaction		
No	794 (73%)	966 (64%)
Yes	298 (27%)	550 (36%)
E-Learning		
No	828 (76%)	1092 (72%)
Yes	264 (24%)	424 (28%)

Note. Results for *Online Interaction*, $\phi = .095$, $p = .000$ and *E-Learning*, $\phi = .042$, $p = .030$. Column percentages in parentheses.

Faculty Race and Accelerated Coursework

RQ6: To what degree does the use of technology among community college faculty working directly with students in an accelerated course and faculty race?

Chi-square tests were performed to compare faculty race and the four modalities of an accelerated course ([ACC], no = 0 and yes = 1). There were 3,002 faculty members who reported teaching or facilitating an ACC.

The Chi-square test found a statistically significant difference between faculty race and the four modalities of ACC (*Face-to-Face Interaction*, $\chi^2(6, 3002) = 19.854, p < .01$, *Online Interaction*, $\chi^2(6, 3002) = 15.475, p < .05$). A small effect size (.072) was found.

Regarding *Face-to-Face Interaction*, examination of the within-group column found that a Native Hawaiian (100%) faculty was more likely to employ *Face-to-Face Interaction* in an ACC compared to 93% of Hispanic faculty, 90% of Native American faculty, 88% of Asian and Black faculty, 84% of White faculty, and 78% of faculty who reported their race as Other, when working directly with students. It was also found that 16% of White faculty was more likely to employ *Face-to-Face Interaction* in an ACC compared to 22% of faculty who reported their race as Other, 12% of Asian, and Black faculty, 7% of Hispanic faculty, and 11% of Native American faculty, when working directly with students.

In terms of *Online Interaction*, examination of the within-group column found that White (100%) faculty were more likely to use *Online Interaction* in an ACC compared to 52% of faculty who reported their race as Other, 45% of Native American faculty, 41% of Black faculty, 39% of Hispanic faculty, and 37% of Asian faculty, when working directly with students. It was also found that 61% of Hispanic faculty were less likely to employ *Online Interaction* in an ACC compared to 63% of Asian faculty, 59% of Black faculty, 55% of Native Hawaiian faculty, 52% of White faculty, and 48% of faculty who reported their race as Other, when working directly with students. The Null hypothesis was rejected.

Conversely, there was no statistically significant difference found between faculty race and two of the four modalities of ACC, (*E-Learning*, $\chi^2(6, 3002) = 8.105$, $p = .088$, *Social Networking Technologies*, $\chi^2(6, 3002) = 8.303$, $p = .081$). Thus, the Null hypothesis was retained. Table 7 presents the Phi coefficient results.

Table 7.

Phi Coefficient Significant Results on Faculty Race Status and the ACC Modalities

Face-to-Face Interaction	Faculty Race Status						
	Native American	Asian	Native Hawaiian	Black or African American	White	Hispanic	Other
No	4 (11%)	15 (63%)	0 (0%)	32 (12%)	351 (16%)	12 (7%)	34 (22%)
Yes	17 (90%)	109 (88%)	1 (100%)	233 (88%)	170 (48%)	170 (93%)	123 (78%)
Online Interaction	Native American	Asian	Native Hawaiian	Black or African American	White	Hispanic	Other
No	21 (53%)	78 (63%)	1 (100%)	157 (59%)	1172 (52%)	111 (61%)	76 (48%)
Yes	17 (45%)	46 (37%)	0 (0%)	108 (41%)	1063 (48%)	71 (39%)	81 (52%)

Summary

This chapter presented an analysis of data collected for identifying usage of the four modalities (face to face; online; e-learning; and social network technology) as an instructional method. Descriptive statistics examined faculty

characteristics and the frequency of use of technology among faculty. Finally, the inferential statistic (phi coefficient and chi-square) examined whether a relationship exists between the dependent and independent variables.

Frequencies, utilizing mode and percentage, were performed to evaluate the degree to which the four modalities of first-year seminar or first-year experience were frequently employed by faculty for research question one. It was found that *Face-to-Face Interaction* was the most used modality among faculty working with students in a freshman seminar or first-year experience.

For research question two, Phi Coefficient results found that full-time faculty were more likely to utilize *Face-to-Face Interaction*, *Online Interaction*, and *Social Networking Technologies* in a freshman seminar or first-year experience than part-time faculty who did not. When it came to the employment of the *E-Learning* faculty employment status made no difference; part-time and full-time faculty were the same in their use of *E-Learning* when working directly with students in a freshman seminar or first-year experience.

For research question three, Phi Coefficient results found that full-time faculty were more likely to use all four modalities in an organized learning course than part-time faculty who did not.

In terms of research question four, chi-square results found that faculty age made no difference in their use of the four modalities of college orientation; thus, the faculty was the same in their use of the four modalities, when working directly with students in a college orientation despite the difference in their age.

For research question five, Phi Coefficient results found that female faculty who employed *Online Interaction* and *E-Learning* were more likely to teach a student success course than male faculty who did not. When it came to the use of the other two modalities of student success course, *Face-to-Face Interaction*, and *Social Networking Technologies*, gender made no difference; thus, the male and female faculty were the same in their use of *Face-to-Face Interaction* and *Social Networking Technologies*, when working directly with students in a student success course.

Finally, regarding research question six, chi-square results found that a Native Hawaiian faculty (although represented in small numbers) were more likely to employ *Face-to-Face Interaction*, while White faculty was more than likely to employ *Online Interaction* in an accelerated course compared to that of faculty who reported being of another race. Conversely, faculty race made no difference in their use of *E-Learning* and *Social Networking Technologies* in an accelerated course; thus, the faculty was the same in their use of *E-Learning* and *Social Networking Technologies*, when working directly with students in an accelerated course despite the difference in their racial make-up.

See (Appendix D) for Hypothesis summary.

Chapter five presents a discussion of the findings, conclusions, and recommendations.

CHAPTER V: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

This chapter provides a synopsis of the study. It recapitulates the data analysis, and the results concluded in Chapter 4. The synopsis runs congruent with the research questions. Literature and theoretical framework are related, and the conclusions and recommendations for further studies are offered.

Discussion

Technology seems to be a driving force behind the newest test of community colleges identity. A “widespread investment in technology by community colleges across the country is boosting the image of these two-year schools and making them more competitive with four-year institutions” (Ramaswami, 2009, p. 1). Students who take advantage of this convergence enter in from a world of technology and expect the same in the classroom. Community colleges are reporting that students returning to their schools are expecting technology-based teaching, and colleges that integrate technology use in the classroom have used that as a selling point for attracting students. Many of the community college students “see the technology, both in the knowledge-base and in course delivery” (Ramaswami, 2009, p. 2). However, researchers (Schaffhauser, 2011; Star, 2014; Young, 2014) explain that not all faculty have embraced the technology requirements, nor have they learned to apply them to teaching. These studies showed that faculty buy-in is low in comparison to any technology modality other than Face to Face. Some of the reasons that faculty gave for not embracing technology centers around insufficient IT support, under-

preparedness, and changing technology. For faculty to buy-in to using technology modalities like social media and e-learning, college IT departments should develop training programs that meet the needs of the faculty, and that can work within the discipline they teach. Any training should be designed as a collaboration with faculty. If faculty feel insufficient in knowledge to be able to use the software to incorporate technology in their lesson plans, they are not going to use it. The last thing faculty want, is to lose their credibility with their students by exhibiting little to no knowledge of how a program works. This fear is even more significant when millennial students have the capabilities to figure out and use present day software. Another heartache for faculty using technology in their classrooms is the ever-changing software that sometimes occurs between semester due to upgrades and possible glitches in the system. This makes it very difficult when consistency cannot be maintained. Faculty do not want to re-learn a teaching system with each starting class. That consumes too much time to learn and may require an immediate syllabus adjustment.

The purpose of this quantitative descriptive study was to evaluate community college faculty use of technology modalities (face-to-face interaction, on-line interaction, E-Learning, and social networking technologies) as measured by the CCFSSE 2015 cohort survey in contrast to their demographics. Kvakik and Caruso (2005) hypothesized understanding faculty decisions for incorporating technology in the classroom can help college administrators understand curriculum effectiveness, and to identify when and where to invest and evaluate financial considerations.

The researcher conducted a quantitative descriptive study using ex-post data from the Community College Faculty Survey of Student Engagement (CCFSSE). Survey research provides a quantitative picture of trends, attitudes or opinions of a population (Creswell, 2009). The researcher used Kvavik and Caruso's (2005) theoretical frame of connection, convenience, control, and learning to guide this study in investigating faculty use of technology modalities within the classroom. This study focused on four of the six theoretical modalities; a) integration of IT into the curriculum; b) definition of skills; c) training for students and faculty; d) consistent instructional approaches and learning environment). These four out of six to focus on concepts relevant to faculty use of technology modalities within the classroom; these three modalities can also be found in the CCFSSE questionnaire.

The participants in this study came from the Community College Faculty Survey of Student Engagement (CCFSSE) that was completed during the spring of 2015. The instrument was developed electronically as faculty log into the survey using a unique access code provided by the Center" (CCFSSE Survey reports, 2015, p. 2). The survey had 66 questions and took participants 20-25 minutes to complete. Faculty participants were given a five-point Likert-type scale for answering questions with a range from 0 (*do not know*) to 4 (*very often*). The 2015 CCFSSE Cohort includes 257 institutions from 39 states, plus Micronesia. The Community College Faculty Survey of Student Engagement (CCFSSE) "was completed by 31,508 faculties across 2013, 2014, and 2015 administrations" (CCFSSE Survey reports, 2015, p. 1). However, 23601 participants answered

the specific questions for this study. The demographic characteristics that were measured by the survey included age, gender, race, faculty enrollment (full or part-time) and teaching experience. The results were emailed from CCFSSSE and opened into Microsoft Excel, where no faculty identifying information was shared. Then the data were uploaded into SPSS 23.0 to start the procedure of analyzing the data.

The analytical data were coined from different statistical techniques (frequencies, descriptive regression analysis, and bivariate to evaluate the four modalities (age, gender, race, teaching experience, and enrollment).

Demographic Characteristics

Female participants were 49.6%, and male participants were 39.1%. Participants between the age of 50 and 64 responded the most (38.1%) and the second highest rate (21.3%) were participants between the ages of 40 and 49. The lowest responses (0.3%) came from participants between the ages of 22-29.

White Non-Hispanic participants made up the majority of respondents at (68.9%) with Black or African American Non-Hispanic participants as the second largest participants (6.3%). Hispanic participants were (4.9%), Asians (3.4%), American Indian (.7%) and Native Hawaiian (.1%). Those participants who claimed other equaled (3.7%). The highest responses (28.0%), came from faculty with 10 to 19 years of teaching experience.

The full-time faculty represented (53.4%), while the remaining (46.6%) were considered part-time enrollment. The majority of participants (30.5%); institutions did not have a tenure-track system. The second highest percentage

(29.0%); showed participants that were not on a tenure track even though the institution has one.

The highest percentages responses (20.8%) of teaching experience is between 5 and 9 years, with the lowest being those with 40+ years. Most respondents (45.6%) are instructors with professors coming in second at (18.9%). The lowest percentage of participants are Lecturers (2.1%).

Those with a master's degree hold the highest percentage (58.45). Participants with doctoral degrees ranked second with (15.0%) and other (undefined) with the lowest at (1.6%).

Six research questions guided this study:

1. What is the frequency in the use of technology modalities (face-to-face interaction, on-line interaction, e-learning, and social networking technologies) among community college faculty working directly with students in a freshman seminar or first-year experience?
2. To what degree does the use of technology modalities among community college faculty working directly with students in a freshman seminar or first-year experience and faculty employment status?
3. To what degree does the use of technology modalities among community college faculty working directly with students in an organized learning community and faculty employment status?
4. To what degree does the use of technology among community college faculty working directly with students in a college orientation and faculty age?

5. To what degree does the use of technology modalities among community college faculty working directly with students in a student success course and faculty gender?
6. To what degree does the use of technology modalities among community college faculty working directly with students in an accelerated course and faculty race?

Frequencies on the Four Modalities of Freshman Seminar or First-year Experience

Frequencies were employed, using mode and percentages, for research question one to ascertain which of the four modalities of freshman seminar or first-year experience faculty used most frequently. There were 3,451 faculty members who reported teaching or facilitating a freshman seminar or first-year experience (FYE). In looking at the mode and percentage, it was found that *Face-to-Face Interaction* (94%, $M_o = 1$) was the most used modality among faculty working with students in a freshman seminar or first-year experience. Kvavik and Caruso (2005) noted the integration of IT into the curriculum as a significant part of the make-up of the classroom. They posited that professionals and governments have redefined the competencies required of professionals and Faculty use of technology is now a vital part of a resume. The researcher agrees with the Kvavik and Caruso (2005) study which identified that more worldwide technology use and understanding of technology evolve prompting a new set of skills to be established based on faculty use patterns, and preferences for using technology in the classroom. As noted in their research technology incorporation

must provide what the researchers called convenience (technology and online resources readily available).

The literature review revealed that other researchers also had similar findings and suggestions that understanding faculty use and attitudes for incorporating technology in the classroom can help college administrators understand curriculum effectiveness, identify when and where to invest, as well as the financial impacts (Becking, 2011; Mishra, Koehler & Henrikson, 2011; Zeches, 2011).

Faculty Employment Status and the Four Modalities of FYE

The results for research question 2 found that full-time faculty were more likely to utilize *face-to-face Interaction*, *online Interaction*, and *social networking technologies* in a freshman seminar or first-year experience than did part-time faculty. When it came to the employment of the *E-Learning*, faculty employment status made no difference; part-time and full-time faculty were the same in their use of *E-Learning* when working directly with students in a freshman seminar or first-year experience. Kvavik and Caruso (2005) noted that the faculty needed consistent instructional approaches as a standardized set for faculty use, patterns, and preferences for using technology in the classroom. The data support the need for part-time faculty to adopt more teaching modalities for their instruction. Similar to Kvavik and Caruso (2005) findings, part-time faculty should be given more “control” defined by the researchers (multitasking and customization) as they transition into this process. The researcher gleaned from the literature review and identified that this transition is vital as globalization will

affect all aspects of teaching and learning. Technology plays a leading role in this change as noted in the literature review. Furthermore, the literature review identified using technology as a teaching method that enhances and prepares students for globalization changes in teaching with technology thus, allowing students to take control of their learning. Progressions in technology will drive continual changes in students' lives, offering them new opportunities to enhance and broaden their learning experiences (Moltz, 2010; Flynn & Vredevoogd, 2010).

Faculty Employment Status and an Organized Learning Community

For research question 3, the results revealed that full-time faculty were more likely to use all four modalities in an organized learning course than part-time faculty who did not. Mostly, the findings suggest that part-time faculty was more likely to choose *Face-to-Face* lecturing over integrating technology into the classroom due to the difficulty in balancing time to prepare for courses. The literature review further proves this ideology in suggesting that most challenging issues do come from the faculty's level of preparedness, lack of personal experience with technology and faculty attitude towards technology (Dede, 2011; Funkhouser, 2013; Star, 2011). Furthermore, Kvavik and Caruso (2005) study suggested that faculty need time for training programs that can afford faculty more innovative technology use besides power-point and course management systems.

Faculty Age and College Orientation

The results for research question four indicated that faculty age made no difference in their use of the four modalities of college orientation; thus, the faculty were the same in their use of the four modalities, when working directly with students in a college orientation despite the difference in their age. Kvavik and Caruso's (2005) study noted that college classrooms need consistent technology instructional approaches as a standardized set for faculty to use technology in the classroom. Colleges cannot afford to fall behind in this effort if they wish to maintain competitiveness. Though faculty may interact a little more with technology, there still seemed to be "some continuing disconnects that make it harder for them to do a job that they believe lies at the heart of their organization's missions: teaching" (Norbury, 2013, p. 1). This study revealed that age is not one of the disconnecting reasons that would hinder faculty's ability to integrate virtual and physical assignments, known as (learning) identified in Kvavik and Caruso (2005) study.

Faculty Gender and Student Success Courses

Research question five results found that female faculty who employed *online interaction* and *e-Learning* were more likely to teach a student success course of male faculty who did not. When it came to the use of the other two modalities of student success course, *face-to-face interaction*, and *social networking technologies*, gender made no difference; thus, the male and female faculty were the same in their use of *face-to-face* interaction and *social networking technologies*, when working directly with students in a student

success course. Defining and establishing a new set of skills required for faculty, applying technology in the classroom, will help faculty find more of a need to use it. Kvavik and Caruso (2005) noted that a new set of assistance is needed to enhance community college faculty's existing skills level, usage patterns, and preferences for using technology in the classroom. These new skills learned should include "connection" training named by the authors as a mobile electronic connection. Tabata and Johnsrud (2008) found that faculty had access to technology on and off campus, but participation is still lacking. The researchers noted that faculty use emails and web-based tools for contacting colleagues or performing research, but not in the classrooms for instruction. This is still true today as pointed out by the researchers (Schaffhauser, 2011; Star, 2014; Young, 2014), who explained that not all faculty had embraced the technology requirements, nor have they learned to apply them to teaching.

Faculty Race and an Accelerated Course

Finally, research question six results revealed that a native Hawaiian faculty were more likely to employ *face-to-face Interaction*, while White faculty was more likely to employ *online Interaction* in an accelerated course compared to that of faculty who reported being of another race. Conversely, faculty race made no difference in their use of e-Learning and social networking technologies in an accelerated course; thus, the faculty was the same in their use of *E-Learning and social networking technologies*, when working directly with students in an accelerated course despite the difference in their racial make-up. Although the results from this study show race does not play a role in faculty choice of technology modality, and the literature review identified that race differences in

technology usage have decreased vividly for African American adults, (Jackson, L.A., Zhao, Y., Kulonic III, A., Fitzgerald, H.E., Harold, R., & Eye, A.V., 2008), African Americans scored just slightly higher (59%) than the lowest percentage recorded from Native Americans at (53%). Kvavik and Caruso (2005) suggested that lower income adults home internet usage is minimal compared to other groups. Therefore, the community classroom instructional approaches should maintain a standard set for incorporating technology into instruction; this will encourage faculty to improve their skills and use of technology in the classroom. Without standardizing, this process, lecturing will always be the teaching method of preferred choice. Data are needed to enhance the use of technology. Literature review further suggested that current empirical data supporting the use of technology in community college classrooms are lacking, (Norbury, 2013; Schaffauser, 2011; Star, 2011).

Kvavik and Caruso's (2005) study found there is a need to measure and assess faculty usage and their attitudes toward technology to further understand the curriculum's effectiveness, training, and financial investment impacts. Their research also posited faculty need for "learning" (the ability of how to integrate virtual and physical assignments).

Conclusion

1. A conclusion can be drawn from Frequencies, utilizing mode and percentage, that *face-to-face Interaction* was the most used modality among faculty working with students in a freshman seminar or first-year experience.

2. Phi Coefficient results concluded that full-time faculty were more likely to utilized *face-to-face Interaction, online Interaction, and social networking Technologies* in a freshman seminar or first-year experience than part-time faculty who did not.
3. As identified by the Phi Coefficient results, a conclusion can be drawn that full-time faculty were more likely to use all four modalities in an organized learning community course than part-time faculty who did not.
4. As noted from the Chi-square results, the conclusion is that faculty age made no difference in their use of the four modalities working directly with students in a college orientation despite the difference in their age.
5. It can be concluded as noted in the Phi Coefficient results that female faculty who employed *online Interaction and E-Learning* were more likely to teach a student success course than male faculty who did not. When it comes to the use of *face-to-face Interaction and social networking technologies*, gender made no difference when working directly with students in a student success course.
6. The final conclusion drawn from Chi-square results found that a native Hawaiian faculty (although small in number) were more likely to employ *face-to-face Interaction*, while White faculty were more likely to employ *online Interaction* in an accelerated course compared to faculty who reported other ethnicities. Conversely, faculty race made no

difference in their use of *E-Learning* and *social networking technologies* in an accelerated course.

This study revealed that faculty are participating in more face-to-face (lecturing) rather than applying technological method(s) in the classroom; nevertheless, there are studies that draw attention to the fact that technologies are useful and available for faculty and students (Becking, 2011; Mishra, Koehler, & Henrikson, 2011). Studies indicate that faculty members do not feel supported by administrators with the necessary tools or training to incorporate technology into the classroom (Holum & Gahala, 2001; Mosher, 2007). This may explain this study's findings that the faculty are more favorable towards lecturing versus any other teaching methods. For faculty to change, it will require a change in attitudes from college leaders as postulated in Becking's (2011) report.

Funkhouser's (2013) study echoed the findings in this study but further posited that a need for faculty belief and ideas about the role in classroom technology would have to change. Faculty need to see evidence of the benefit of using technology in the classroom as reported by Egbert, Paulus, & Nakamichi, 2002. This would mean taking the time to learn new software and for many faculty, especially part-time faculty as noted within the literature of this study, grapple with the demand of learning these new skills (Twigg, 2003). Faculty support for any new software issues would need to be taken care of immediately to prevent disruption in the classroom (Norbury, 2013) to lessen any fears. For many colleges' faculty, "buy-in" is difficult and funding is limited even to integrate technology into the classroom.

Finally, the researcher could sum up this study noting the same findings explained by Schaffauser (2011): Faculty use of technology in the classroom is lacking. In some cases, it is not that they do not have a desire to use technology in their classes, but more about lack of training, support and time. This attitude for the known use of technology in the classroom does not help community colleges who are not just competing with state colleges but private colleges as well (Tabata & Johnsrud, 2008). As far back as 1997, community college leaders were talking about the need for integrating technology in the classroom. O'Banion (1997) theorized the importance to use technology to coordinate a variety of instructional activities. Kvavik and Caruso (2005) posited the need for curriculum and technology use to intertwine. The authors understood that there probably will not ever be a time where no lecturing will happen in a community college. Nor should that be the goal of technology integration. The objective is really about technology working alongside lecturing. As Kvavik and Caruso noted in their 2005 study students want a moderate amount of technology in their courses. However, as the authors stated, it is imperative for faculty to use technology well in order to hold the student's interest and to accommodate learning styles of this millennium generation. Faculty may not understand how to use or participate in blogs, nor interact on social media. If integration of technology in the classroom is to take place, Kavik and Caruso discussed the need for faculty to have the convenience (technology and online resources readily available) and learning ability to integrate virtual and physical assignments. Today globalization has brought students into the classroom from

around the world (Flynn & Vredevoogd, 2010). Integrating technology into the classroom can take the face to face student out to the world, without them moving from their seats.

Limitations

This quantitative descriptive study was limited to faculty choice of modality (face to face, online, E-learning, *social networking technologies*) teaching at a community college. This research did not consider reasons why faculty chose one modality over the other. It did not research students' preferences, skills, and experience using technology in the classrooms where these modalities were used. This research also did not look at the outcomes for student success in classes where these modalities were offered.

In some cases, faculty may have used more than one technology modality in their face to face class. The CCFSSSE survey only allowed the faculty to choose one method. Inferences can be made that faculty chose the more frequently used modality. However, the CCFSSSE *expo facto* data from their surveys prevented the researcher from discovering the reason faculty chose one modality over the other.

Recommendation

The findings and results presented in this quantitative descriptive study have contributed new information to the educational literature about faculty integrating technology into the classroom. While there is a surfeit of studies investigating online education, only a few studies have focused on integrating technology into the classroom as a teaching method. The findings of this study

are informative to college administrators and leaders identifying the practices of faculty to bring a 21st-century classroom method of teaching in the community college. The focus, principally on faculty use technology modality (face to face, online, E-Learning and social media network) in the classroom as measured by CCFSSE 2015 cohort survey, is suggested as useful for the future growth and stamina of community college. Students today come from a culture surrounded daily by technology to accomplish daily living skills. Smartphones allow students to multi-task many functions that previously could only be done one at a time and that would mean being physically in a particular place to accomplish the goal of the day. When faculty integrate technology into the classroom, students can Skype into the classroom from anywhere in the world where broadband makes it possible. Technology in the classroom is already happening in elementary schools where the faculty are integrating technology into their curriculum. This trend is also noticed in middle and high schools. Therefore, community college student success can hang in the balance without it, from the cultural shock of a freshman where previous studies included it. Based on the findings above, the following recommendations are made for future studies and best practices.

Recommendation for Future Research.

- More research should be conducted to evaluate the reasons faculty use one technology modality over the other. This will allow college administrators to determine funding needs and resources that will support faculty and students.

- Research is needed to explore faculty reasons for not using technology in the classroom. Without identifying faculty concerns over using technology, college administrators cannot determine if it is a matter of faculty unwillingness to change, needed training, better software packages or new hardware equipment to support staff for integration of technology in the classroom.
- Follow-up studies should explore faculty use of technology in the classroom at specific colleges for a comparison. Taking a survey of what courses have more success using technology programs will eliminate fiscal overspending and un-used inventory.
- Additional studies should examine the funding issues for colleges to support the integration of technology into the curriculum.
- A comparison study should be performed to discover faculty use of technology between Historically Black Institutions and Predominantly White Institutions. College administrators can get a better idea about course offering for maintaining competitiveness with this comparison
- Further studies should look at the success of students attending courses that integrate technology into the classroom.
- Finally, further research is needed to explore the four modalities of this study in comparison to each subject area to identify specific courses that use technology in the classroom. College administrators and leaders will be better equipped to decide on funding allocations.

Recommendations for Best Practice. Based on the findings above, the following recommendations are made for best practices.

- Community college administrators and leaders should discuss faculty training and support with IT departments. Any training decisions should include faculty in the discussions. Research has identified when the faculty are involved in the decision about curriculum changes faculty buy-in is the result.
- Community college faculty using technology-based curriculums should develop lessons that are flexible enough to accommodate numerous learning styles developed on known, accepted academic teaching methods. Kavik and Caruso's (2005) study revealed that students want a moderate use of technology in their classroom.
- Community college IT departments should budget for software updates for use with technology-based instruction. Implementation should only occur when it is confirmed that the software is compatible with the present computer systems. IT departments should also consider the cost of maintaining a license for specific software packages.
- When specific sites are used for an online lesson, that will require students to have critical thinking dialogue, centered around one particular topic, Faculty should be present at the website to facilitate, answer questions, and help the students stay focused on the assignment.

This quantitative descriptive study has sought to emphasize the body of research integrating technology into the classroom as a teaching method. Kavik and Caruso (2005) posited that students do well in courses that use technology methods. Academic, scholarly researchers interested in classroom technology integration may choose to explore faculty attitudes and concerns for not using it and for rethinking their commitment to using technology in their classrooms.

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Appendix A

Faculty Response Survey Instrument Report

Item	Variable	Responses	Report*
During this term, does your institution consider you to be employed part-time or full-time?	FENROLL	1 = Part-time 2 = Full-time	Faculty
During the current academic year at this college, in which of the following ways, if at all, have you been involved in a structured experience for new students (sometimes called a "freshman seminar" or "first-year experience")? (Mark all that apply.)			
Teaching/facilitating	FYETEACH	0 = No response 1 = Response	Faculty
[If responded to FYETEACH] In your work directly with students in a freshman seminar or first-year experience, which of the following modalities have you employed when carrying out those activities? (Mark all that apply.)			
Face-to-face interaction	FYEFF	0 = No response 1 = Response	Faculty
Online interaction (such as mediated lectures, forums, chat)	FYEOL	0 = No response 1 = Response	Faculty
Computer-assisted learning (such as simulations, virtual labs, specialized software)	FYECAL	0 = No response 1 = Response	Faculty
Social networking technologies (such as Facebook, Twitter, MySpace)	FYESN	0 = No response 1 = Response	Faculty
During the current academic year at this college, in which of the following ways, if at all, have you been involved in an organized "learning community" (two or more courses that a group of students take together)? (Mark all that apply.)			
Teaching/facilitating	LCTEACH	0 = No response 1 = Response	Faculty
[If responded to LCTEACH] In your work directly with students in an organized learning community, which of the following modalities have you employed when carrying out those activities? (Mark all that apply.)			
Face-to-face interaction	LCFF	0 = No response 1 = Response	Faculty
Online interaction (such as mediated lectures, forums, chat)	LCOL	0 = No response 1 = Response	Faculty
	LCCAL	0 = No response	Faculty

Computer-assisted learning (such as simulations, virtual labs, specialized software)		1 = Response	
Social networking technologies (such as Facebook, Twitter, MySpace)	LCSN	0 = No response 1 = Response	Faculty
During the current academic year at this college, in which of the following ways, if at all, have you been involved in college orientation? (Mark all that apply.)			
Teaching/facilitating	ORTEACH	0 = No response 1 = Response	Faculty
[If responded to ORTEACH] In your work directly with students in college orientation, which of the following modalities have you employed when carrying out those activities? (Mark all that apply.)			
Face-to-face interaction	ORFF	0 = No response 1 = Response	Faculty
Online interaction (such as mediated lectures, forums, chat)	OROL	0 = No response 1 = Response	Faculty
Computer-assisted learning (such as simulations, virtual labs, specialized software)	ORCAL	0 = No response 1 = Response	Faculty
Social networking technologies (such as Facebook, Twitter, MySpace)	ORSN	0 = No response 1 = Response	Faculty
During the current academic year at this college, in which of the following ways, if at all, have you been involved in a student success course (such as a student development, extended orientation, study skills, student life skills, or college success course)? (Mark all that apply.)			
Teaching/facilitating	SSCTEACH	0 = No response 1 = Response	Faculty
[If responded to SSCTEACH] In your work directly with students in a student success course, which of the following modalities have you employed when carrying out those activities? (M ark all that apply.)			
Face-to-face interaction	SSCFF	0 = No response 1 = Response	Faculty
Online interaction (such as mediated lectures, forums, chat)	SSCOL	0 = No response 1 = Response	Faculty

Computer-assisted learning (such as simulations, virtual labs, specialized software)	SSCCAL	0 = No response 1 = Response	Faculty
Social networking technologies (such as Facebook, Twitter, MySpace)	SSCSN	0 = No response 1 = Response	Faculty
During the current academic year at this college, in which of the following ways, if at all, have you been involved in an accelerated course or a fast-track program (learning experience designed to move students through coursework in order to complete their educational goals more quickly)? (Mark all that apply.)			
Teaching/facilitating	ACCTEACH	0 = No response 1 = Response	Faculty
[If responded to ACCTEACH] In your work directly with students in an accelerated course or a fast-track program, which of the following modalities have you employed when carrying o ut those activities? (Mark all that apply.)			
Face-to-face interaction	ACFF	0 = No response 1 = Response	Faculty
Online interaction (such as mediated lectures, forums, chat)	ACCOL	0 = No response 1 = Response	Faculty
Computer-assisted learning (such as simulations, virtual labs, specialized software)	ACCCAL	0 = No response 1 = Response	Faculty
Social networking technologies (such as Facebook, Twitter, MySpace)	ACCSN	0 = No response 1 = Response	Faculty
Faculty Demographic Characteristics			
What is the highest degree you have earned?	FDEGREE	1 = Other 2 = Associate degree 3 = Bachelor's degree 4 = Master's degree 5 = Doctoral degree (e.g., Ph.D., Ed.D.) 6 = First professional degree (e.g., M.D., D.D.S., J.D., D.V.M.)	Faculty

Academic rank or position	FACADRANK	1 = Other 2 = Lecturer 3 = Instructor 4 = Assistant Professor 5 = Associate Professor 6 = Professor	Faculty
Tenure status	FTENURE	1 = No tenure system at this institution 2 = Not on tenure track, although this institution has a tenure system 3 = On tenure track, but not tenured 4 = Tenured	Faculty
Years of teaching experience	FYEARS	1 = 40 years or more 2 = 30 to 39 years 3 = 20 to 29 years 4 = 10 to 19 years 5 = 5 to 9 years 6 = 1 to 4 years 7 = First-year teacher	Faculty

Faculty Age	FACAGE	1 = 22 to 24 2 = 25 to 29 3 = 30 to 39 4 = 40 to 49 5 = 50 to 64 6 = 65 or more	Faculty
Gender	FSEX	1 = Male 2 = Female	Faculty
Race	FRERACE	1 = American Indian or other Native American 2 = Asian, Asian American or Pacific Islander 3 = Native Hawaiian 4 = Black or African American, Non-Hispanic 5 = White, Non-Hispanic 6 = Hispanic, Latino, Spanish 7 = Other	Faculty

Appendix B:

Data Use Agreement Request



Data Use Agreement *Community College Faculty Survey of Student Engagement*

The Community College Faculty Survey of Student Engagement (CCFSSE) instrument is copyrighted. Data collected through CCFSSE administration and maintained as part of the Center for Community College Student Engagement's (CCCSE) national database is the property of CCCSE. These data will be made available only for use in research projects approved by CCCSE in advance and only upon favorable review of the requestor's submission of the following information:

1. List of the specific CCFSSE item(s) and/or the specific group of colleges or college types for which data are requested, along with an indication of the survey year(s) for which the data are requested (the description of data requested must be very specific for CCCSE staff to be able to respond to your request);

I am interested in the Faculty Student Survey 2015 Cohort responses to the following 5 questions based on percentages by their Age group, Race, Gender, Teaching experience, and Employment status. I need the total count & percentage for each of the five questions 4 modalities.

Question 1. In your work directly with students in a freshman seminar or first-year experience, which of the following modalities have you employed when carrying out those activities?

- Face-to-face interaction
- Online interaction (such as mediated, lectures, forums, chat)
- Computer-assisted learning (such as simulations, virtual labs, specialized software)
- Social networking technologies (such as Facebook, Twitter, MySpace)

Question 2. In your work directly with students in an organized learning community, which of the following modalities have you employed when carrying out those activities? (Mark all that apply.)

- Face-to-face interaction
- Online interaction (such as mediated, lectures, forums, chat)
- Computer-assisted learning (such as simulations, virtual labs, specialized software)
- Social networking technologies (such as Facebook, Twitter, MySpace)

Question 3. In your work directly with students in college orientation, which of the following modalities have you employed when carrying out those activities? (Mark all that apply.)

- Face-to-face interaction
- Online interaction (such as mediated, lectures, forums, chat)



Computer-assisted learning (such as simulations, virtual labs, specialized software)
 Social networking technologies (such as Facebook, Twitter, MySpace)

Question 4. In your work directly with students in a student success course, which of the following modalities have you employed when carrying out those activities? (Mark all that apply.)

Face-to-face interaction
 Online interaction (such as mediated, lectures, forums, chat)
 Computer-assisted learning (such as simulations, virtual labs, specialized software)
 Social networking technologies (such as Facebook, Twitter, MySpace)

Question 5. In your work directly with students in an accelerated course or a fast-track program, which of the following modalities have You employed when carrying out those activities? (Mark all that apply.)

Face-to-face interaction
 Online interaction (such as mediated, lectures, forums, chat)
 Computer-assisted learning (such as simulations, virtual labs, specialized software)
 Social networking technologies (such as Facebook, Twitter, MySpace)

2. Written permission from college president(s)/CEO(s), if data for a specific college or colleges are requested (as contrasted with aggregate data);

N/A I am reviewing as a whole cohort no specific college will be needed or mention in my paper

3. Statement of the objective of the applicant's study, along with clearly stated research questions;

The objective of this study is to evaluate community college faculty choice of use for the four technology modalities (face-to-face interaction, on-line interaction, computer-assisted learning, and social networking technologies) as measured by the CCFSSSE 2015 cohort survey. Understanding faculty use of technology modalities using age, gender, race, tenure and full or part time status, will show their use of technology as a teaching tool within the classroom demographically.

**Main research question**

Is there a difference in the usage of technology modalities (Face-to-face interaction, On-line interaction, E- learning, and Social networking technologies) among faculty teaching at community colleges as measured by CCFSSSE 2015 cohort survey?

Seven subsidiary research questions

1. Is there a difference in use of technology modalities (face-to-face interaction, on-line interaction, e- learning, and social networking technologies) among faculty at community colleges working directly with students in a freshman seminar or first-year experience as measured by CCFSSSE 2015 cohort survey

- a. Among faculty' age groups?
- b. Between faculty' gender?
- c. Among faculty' race?
- d. Among full or part time faculty?
- e. Based on years of faculty' teaching experience?

2. Is there a difference in the usage of technology modalities (face-to-face interaction, on-line interaction, e- learning, and social networking technologies) among faculty at community colleges working directly with students in an organized learning community

- a. Among faculty' age groups?
- b. Between faculty' gender?
- c. Among faculty' race?
- d. Among full or part time faculty?
- e. Based on years of faculty' teaching experience?



3. Is there a difference in use of technology modalities (face-to-face interaction, on-line interaction, e- learning, and social networking technologies) among faculty at community colleges working directly with freshman students in a college orientation as measured by CCFSSSE 2015 cohort survey

- a. Among faculty' age groups?
- b. Between faculty' gender?
- c. Among faculty' race?
- d. Among full or part time faculty?
- e. Based on years of faculty' teaching experience?

4. Is there a difference in use of technology modalities (face-to-face interaction, on-line interaction, e- learning, and social networking technologies) among faculty at community colleges working directly with students in a student success course as measured by CCFSSSE 2015 cohort survey

- a. Among faculty' age groups?
- b. Between faculty' gender?
- c. Among faculty' race?
- d. Among full or part time faculty?
- e. Based on years of faculty' teaching experience

5. Is there a difference in use of technology modalities (face-to-face interaction, On-line interaction, e- learning, and social networking technologies) among faculty at community colleges working directly with students in an accelerated course or a fast-track program as measured by CCFSSSE 2015 cohort survey

- a. Among faculty' age groups?
- b. Between faculty' gender?



- c. Among faculty' race?
- d. Among full or part time faculty?
- e. Based on years of faculty' teaching experience⁶.

6. Is there a difference in the use of technology modalities (face-to-face interaction, on-line interaction, e- learning, and social networking technologies) among faculty at a community colleges working directly with students providing supplement instruction as measured by CCFSSSE 2015 cohort survey

- a. Among faculty' age groups?
- b. Between faculty' gender?
- c. Among faculty' race?
- d. Among full or part time faculty?
- e. Based on years of faculty' teaching experience⁷.

7. Is there a correlation between full and part time faculty' usage of technology modalities (face-to-face interaction, on-line interaction, e- learning, and social networking technologies) as measured by CCFSSSE 2015 cohort survey?

4. Expected completion date of the research;

5. Name, title, organization and complete contact information for the principal investigator; if the requested use is for a dissertation study, please also provide the same information for the dissertation committee chairperson.

*D'Artegnon Tisdale, MPA
Morgan State Community College Leadership Doctoral program- student*

Gillet karam, PHD (chair-person)
Morgan State University Associate Professor Community College Leadership Doctoral Program



Agreement:

Applicant must agree to the following conditions:

1. Applicant will provide to CCCSE both electronic and hard copies of the proposal for subject research (e.g., the dissertation proposal for doctoral studies), including the overview of proposed research, research questions, literature review, and description of methodology. These materials shall be provided in a timeframe that allows CCCSE staff at least 3 weeks for review and comment prior to finalization of the research proposal.
2. Applicant will provide to CCCSE an electronic copy of the results of data analysis; electronic and hard copies of the subject report or study; and the appropriate citation for the work. The signature below also indicates permission to cite the report or study, with appropriate credit, on the CCCSE Web site.
3. When CCFSSSE data are reported, applicant will include the following citation: "Data used with permission from *The Center for Community College Student Engagement, The Community College Faculty Survey of Student Engagement [date of survey version – e.g., 2007], The University of Texas at Austin.*"
4. Permission is valid for one-time use only but may be renewed with written permission from CCCSE.
5. Applicant agrees to comply with provisions set forth in CCCSE's policy statement on Responsible Uses of Survey Data (see link at bottom of page at www.cccse.org).
6. **Applicant agrees to pay \$750.00 for the requested data.** Applicant will be notified when the application has been approved and will, at that time, be sent an invoice. Once payment has been received, CCCSE staff will create the analysis data set and send it to the applicant.

Please Print Principal Investigator's Name

Principal Investigator's Signature

Date

Please return this information to the address listed below or email to data@cccse.org.

The University of Texas at Austin
Center for Community College Student Engagement
3316 Grandview Street, Austin, TX 78705

Appendix C:**Email of Permission to Use Survey****10-30-16**

Hi Dartegnon,

I have reviewed your revised data request. Your request is approved. Per the agreement, there is a \$750.00 fee for creating the data set. Our Administrative manager copied on this message will send you an invoice soon. Once we receive payment for the data set, one of my staff will create the file. We will send You the data and a codebook within 10 business days of receipt of payment.

Please let me know if you have any questions.

Mike.

E. Michael Bohlig, Ph.D. | Assistant Director of Research
Center for Community College Student Engagement
Program in Higher Education Leadership

Appendix D:
Research Null Hypothesis Findings

Table 12.

Summary of Results

Variables	FYE	OLC	SSC	ACC
Employment Status	L	L, S	ND, NS	L, S
Gender	H	H, S	ND, NS	H, S
Age	NS	S	NS	ND
Race	NS	S	NS	S

Note: ND – (No difference) H – (Higher level) S – (Supported by Research)

D – (Difference) L – (Lower level) NS – (Not Supported by Research)