ABSTRACT

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Community colleges are composed of full-time faculty and adjunct faculty who serve a diverse student population. As faculty they are expected to remain up-to-date in the best practices of instruction; to be experts in their areas of specialty; and are traditionally non-trained academics. At the same time, regional accrediting agencies have also established accreditation guidelines where faculty are to be qualified; have access to professional development opportunities; and online faculty have access to appropriate training. This study sought to understand full-time and adjunct faculty members' attitudes, skills, and institutional resources towards professional development opportunities available to individuals who teach and develop online courses. This quantitative research employed an Internet-based survey of full-time and adjunct faculty who work on the 58 different North Carolina Community College Systems campuses. The questionnaire consisted of three topics (a) attitudes, (b) skill, and (c) institutional resources. Respondents were asked to rate the importance of each topic along a 5-point Likert scale. The study posed both research questions and hypotheses. Research questions concerning the perceptions of online teaching and course development were answered by computing descriptive statistics for each category. Null hypotheses regarding the perceptions among full-time faculty and adjunct faculty were tested with independent samples t-tests on comparing the importance to online instruction and their self-assessment. Next, paired samples t-tests were used to compare the similarities and differences between the full-time faculty's and adjunct faculty's responses. Results indicated consensus in the perceptions of both full-time faculty and adjunct faculty along the topics of skills and institutional resources with attitudes reflecting one question

with non-agreement. A statistically significant difference existed among all three professional development categories in the comparison between importance to online instruction and the self-assessment except for one area: the self-assessment on institutional resources. Results indicated faculty have a growth mindset and are receptive to ongoing professional development opportunities that are related to their interests while efficiently using campus resources.

NORTH CAROLINA COMMUNITY COLLEGE SYSTEM AND FACULTY PROFESSIONAL DEVELOPMENT

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DEDICATION

I dedicate this dissertation to my parents and my mentors. Their support, guidance, and encouragement provided me with the determination to seek my goal of earning a Doctorate in Education. They include my parents, Robert L. and Betty J. Tumey, and my mentor Ms. Elizabeth Grey, Mrs. Lett, Mrs. Gale Rudisill, Ms. Nellie Pruitt, Ms. Mary Jane Kagarise, Dr. Ralph Soney and Dr. Crystal R. Chambers. As teachers and colleagues, each one shared their passion for education with me that nurtured my aspiration to work within the field of education in addition to pursuing this journey.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE: INTRODUCTION TO THE STUDY

Introduction

Distance learning challenges the academic work of colleges and universities as well as the politics of institutional self-regulation. This, in turn, places significant responsibility on the accrediting community in two ways. First, accreditors must take the initiative in defining the difference in teaching and learning that distance learning brings – in order to sustain the quality of the higher education experience … Second, accreditors must attend to the bond of trust that has been created with the government: In exchange for assurance about quality through voluntary accreditation, government honors the principle of self-regulation and institutional autonomy (Eaton, 2001, p. 2).

Responding to the Spellings Commission on the Future of Higher Education (2006), and to concerns raised about the quality and lack of regulation of distance education, the Council for Higher Education Accreditation (CHEA) charted a path towards the greater regulation of distance education through regional accrediting bodies, including the Southern Association of Colleges and Schools (SACS). In CHEA's 2001 report, President Judith Eaton summarized the threat of governmental intrusion into the regulation of higher education and offered CHEA's response and assumed responsibilities to the regional accrediting associations. The idea was to prevent government regulation by electing to voluntarily self-regulate distance education. The issue of interest in the present work was to explore how this network of self-regulation impacts faculty, in particular community college faculty due to the regional accrediting organizations have included standards that address hiring qualified faculty and colleges having to provide them with ongoing professional development opportunities. The purpose of the present study is to analyze full-time and adjunct faculty members' attitudes, skills, and institutional resources

towards professional development (PD) opportunities available to individuals who teach and develop online courses.

Of particular concern is the receptivity of faculty to new distance education standards. As reflected by American University Professor Emeritus and former Provost, Milton Greenberg (2012), most persons in and outside of academe perceive accreditation as "arcane and boring," intrusive, "put[ing] faculty issues like curriculum and governance clearly on the screen" while "say[ing] very little about faculty roles and mak[ing] only vague references to 'faculty involvement'" (pp. 2-3). Nevertheless, he emphasized the need for alliances among faculty, administrators and accrediting bodies: "This is about jointly making the case for our enterprise as a national treasure":

Accreditation is essential to sustain the quality and integrity of American higher education. And that voluntary system is under threat. Should not the most vital element of our enterprise—the faculty – be made an integral part of the drive to defend it? (Greenberg, 2012, p. 12).

Purpose of the Study

The purpose of this study was to analyze full-time and adjunct faculty members' attitudes, skills, and institutional resources towards PD opportunities as they related to online teaching and course development. In particular, I assessed full-time and adjunct faculty's perceptions of institutional support and the extent of the skills displayed by the North Carolina Community College System (NCCCS) office, as well as other entities, when preparing and conducting online PD courses. These resources can be delivered through classroom (face-to-face) delivery, web-based content, and/or self-paced courses that may or may not be facilitated by an instructor.

As a result of the continually changing academic environment for full-time and adjunct faculty caused by shifting student enrollment numbers and annual budgets, the NCCCS, in conjunction with the federal government (via the *Carl D. Perkins Career and Technical Education Act of 2006*) enabled multiple PD opportunities. For example, the Tech-Prep Education program (U.S. Department of Education, 2009), the Curriculum Improvement Project (CIP), and Career and Technical Education programs (Kotamraju & Steuernagel, 2012) provide both full-time and adjunct faculty who work in these fields with PD. In addition to these programs, the NCCCS created two PD depositories that are freely available to the system's entire full-time and adjunct faculty. These system initiatives provided examples of how one community college system implemented multiple PD options for their faculty by maximizing the use of external funding.

For example, one system resource was created in 1999, the *Virtual Learning Community* (VLC), and the second, the *North Carolina Network for Excellence in Teaching* (NC-NET), was begun in 2003. Each resource provides all NCCCS full-time and adjunct faculty with PD offerings related to topics such as course content, classroom instruction and the different learning management systems used in face-to-face meetings. Online content can be facilitated by an instructor or as self-paced modules. These PD avenues could be used to meet standards of the regional accrediting agency, the Southern Association of Colleges and Schools, Commission on Colleges (SACS-COC). Current SACS-promulgated accreditation guidelines include three directives addressing credentials and professional development:

- Comprehensive Standard 3.7.1 – "The institution employs competent faculty members qualified to accomplish the mission and goals of the institution. …" (SACS-COC, 2012, p. 30).

- Comprehensive Standard 3.7.3 – “The institution provides ongoing professional development of faculty as teachers, scholars, and practitioners” (SACS-COC, 2012, p. 31).
- Distance and Correspondence Education Policy Statement – “Faculty who teach in distance and correspondence education programs and courses receive appropriate training” (SACS-COC, 2010, p. 3).

The PD opportunities provided through NCCCS were designed to enable faculty to participate in courses that are flexible enough to gain new knowledge while satisfying accreditation guidelines. What was unclear was the influence of these provisions and mandates on faculty attitudes, skills, and perceptions of institutional resources for distance education course development and teaching.

Conceptual Framework

The conceptual framework for this study combined adult learning theory (Knowles, 1990; Lawler, 2003) with Dwerk’s (2012) theory on an individual’s fixed or growth mindset. Beginning with the latter, Dwerk posited that people tended to have one of two mindsets, which are on a continuum. Persons with a growth mindset tended to be open to feedback and redirection, whereas people with a fixed mindset had a more difficult time taking constructive criticism. The difference in mindset, she explained, could influence a person’s success through seeking continual challenges in comparison to those who internalized a negative result as failure and did not possess the ability to change or seek further personal improvement. Instead, success should not be interpreted as a destination, but as a pendulum continually moving in one direction or another (Dweck, 2006, p. 211). Dwerk’s (2006) study concluded that one’s growth or fixed

mindset tendencies could vary over time based upon a person's surrounding environment and their personal ability to overcome their internal monologue (p. 225).

Mindset dovetails into adult learning theory, as Knowles (1990) posited; in order for adults to learn, they must be internally motivated, have an interest in the content taught, and be self-directed in their learning (see also: Lawler, 2003; Taylor & McQuiggan, 2008; Wallin & Smith, 2005). Top-down initiatives, which bypassed experientially-derived desires to learn, contradicted optimal conditions for adult learning. Professional development in this vein may result in:

> teachers of adults …[facing] challenges in classes, in-service, workshops, and courses that seem to turn them off instead of motivating them for growth, learning, and change. They themselves may thus find professional development irrelevant and inconsistent with their own needs (Lawler, 2003).

The conditions under which pressures and provisions for online education developed were not optimal, and it may be the case that some faculty (those with a growth mindset) are making the best of what is, while others are frustrated. Surveying faculty attitudes, skills, and perceptions of institutional resources could provide insights for both the NCCCS and individual colleges as to how to facilitate a PD program that encourages learning among the system's full-time and adjunct faculty, while also meeting accreditation demands.

Need for the Study

Faculty attitudes, skills, and perceptions of institutional resources for PD related to online teaching and course development was the focus of this study. Understanding faculty – both adjunct and full-time instructors' perceptions of the availability of resources, and their views of the skills needed to be proficient and attitudes towards the PD offered—seemed a key component

towards building alliances among faculty, administrators, and accrediting bodies, as proposed by Greenberg (2012).

The need for the study originated from three significant issues present in today's academic institutions. First, today's colleges face a continually changing operating environment due to factors beyond the college's control, such as continuing changes in "economic trends and forecasts, leadership models, business philosophies, political climates, cultural and community mandates, and specific contextual concerns" (King & Lawler, 2003, p. 8). Second, a college's accreditation from a regional accrediting agency signifies to key stakeholders such as current and future students and community leaders that the college's operation adheres to a defined standard of quality. Third, technological developments in online education delivery systems and other communications software can significantly impact the way in which faculty teach online (King & Lawler, 2003). Keeping up can be a challenge for both the technologically savvy and the less technologically adept.

Ideally, this ever-changing environment would create a dynamism in which PD opportunities were balanced with recognizing faculty's needs and interests. By creating a network of PD opportunities, colleges can directly facilitate opportunities for all faculty to remain active in instructional best practices by incorporating current standards into their teaching, as well as fostering a collegial environment (Hanna, 2003). Potentially, these programs reduce "stagnation and burnout by providing faculty with innovative and challenging ways to keep their teaching fresh" (Murray, 2002, p. 51). However, it was unclear to what extent faculty have "bought in," as there had yet to be an assessment of their attitudes, need for professional development, or perception of PD resources. The availability of PD opportunities satisfied at least one end; as colleges were required to meet the accreditation requirements set forth by

regional accrediting agencies, the availability and use of ongoing PD activities could be documented. However, mere documentation is a Foucault-like surveillance society (Felluga, 2011) and does not empower faculty, administration, or accrediting body alliances.

Research Questions

This study was designed to answer the following questions:

1. What are the attitudes of faculty towards professional development for online teaching and course development? Do faculty tend to have growth as compared to fixed mindsets?
2. What are the skills faculty have for online teaching and course development?
3. What do faculty perceive as the institutional resources for professional development for online teaching and course development?
4. Is there a difference in the attitudes, skills, and perceptions of institutional resources by faculty full-time or adjunct status?

The accompanying hypotheses provide a direct comparison between full-time and adjunct faculty. They are:

$H_0$1 – There is no statistically significant difference in faculty attitudes towards professional development for teaching online and course development.

$H_0$2 – There is no statistically significant difference in faculty skills for online teaching and course development.

$H_0$3 – There is no statistically significant difference in faculty perceptions in the availability of institutional resources for online teaching and course development.

$H_0$4 – There is no statistically significant difference between faculty full-time and adjunct faculty in attitudes, skills, and perceptions of institutional resources.

Scope of the Study

The study focused on full-time and adjunct faculty's use of professional development opportunities facilitated through different delivery methods and sponsorships. The NCCCS is composed of 58 different-sized campuses with approximately 13,876 full-time and adjunct faculty (NCCCS, 2013), who served as the focus of the study.

Overview of Methodology

To analyze full-time and adjunct faculty members' attitudes, skills, and institutional resources towards PD opportunities as they relate to online teaching and course development, I used Aydin's (2005) *Online Teaching Roles, Competencies, and Resources Questionnaire* that was divided into the topics of technology, communication, time, online teaching, and content. Each topic was subdivided into the areas of attitudes, skills, and institutional resources. Through the questionnaire, faculty indicated how important they think each element was which measured their self-assessment of where they fall in possessing that attitude, skill or, accessing that resource. The instrument used a five-point Likert scale ranging from very low to moderate to very high. A copy of the questionnaire is available in Appendix A.

Due to the number of NCCCS faculty, electronic communication and distribution of the questionnaire was conducted online with participants contacted via their professional email addresses. Selecting individuals to participate in the questionnaire was aided by gaining permission from each college president and, if allowed, was forwarded to the proper individual with access to the full-time and adjunct faculty's master email list. Contacting each president was facilitated by Catawba Valley Community College's President, who is an active member of the NCCCS President's organization. Anderson and Kanuka's (2003) questionnaire process was followed by creating invitation and consent letters.

As this study is exploratory, descriptive statistics were used to depict faculty attitudes, skills, and perceptions of institutional resources by each item, and vectors were created to report by dimension (technology, communication, time, online teaching, and content). Paired t-tests were used to compare how faculty report the importance of each item and dimension with their self-assessment of whether they possess that attitude, skill, or have access to that resource. Comparisons were made between adjunct and full-time faculty using independent samples t-tests. Further analysis compared faculty skills and perceptions of resources to attitudes. Survey attitudes indicators seem congruent to fixed versus growth mindsets.

Definition of Terms

In order to establish consistency within this study, the following definitions have been used:

Accreditation: The goal of accreditation is to ensure that education provided by institutions of higher education meets acceptable levels of quality. Accrediting agencies, which are private educational associations of regional or national scope, develop evaluation criteria and conduct peer evaluations to assess whether or not those criteria are met. Institutions and/or programs that request an agency's evaluation and that meet an agency's criteria are then "accredited" by that agency (U.S. Department of Education, 2014).

Asynchronous: A type of communication that can occur at any time, meaning that people can communicate online without a pattern of interaction. It is the predominant mode of communication used in e-mail, Usenet groups, and on bulletin (discussion) boards and websites (Palloff & Pratt, 1999).

Community College: As defined by North Carolina General Statute 115D-2, a community college is an educational institution operating under the provisions of this Chapter and dedicated

primarily to the educational needs of the service area which it serves, and may offer:

a. The freshmen and sophomore courses of a college of arts and sciences, authorized by G.S. 115D-4.1;
b. Organized credit curricula for the training of technicians; curricular courses may carry transfer credit to a senior college or university where the course is comparable in content and quality and is appropriate to a chosen course of study;
c. Vocational, trade, and technical specialty courses and programs, and
d. Courses in general adult education.

Distance Learning: An educational or instructional activity that is delivered electronically to students at a distance. It includes, but is not limited to, synchronous or asynchronous learning environments with a variety of instructional models (e.g., audio or video computer conferencing, computer-mediated instruction, or Internet-based instruction) (CHEA, 2002).

Face-to-face Teaching: Teaching that is regularly conducted in a physical classroom throughout the semester with no substitution~~s~~ of virtual meetings for classroom meetings (Taylor &McQuiggan, 2008).

Hybrid/Blended: A course for college credit or continuing education in which the primary method of delivery is online (at least 75% of the course), with a requirement that students also meet in traditional face-to-face sessions, as deemed appropriate by the college (North Carolina Community College System, 2004).

Online Teaching: Teaching conducted completely online with no meetings in a physical classroom (Taylor & McQuiggan, 2008).

Professional Development: A process by which to stay abreast of changes in one's

discipline or area of professional employment and leads to increased expertise in one's discipline (Hahs-Vaughn, Zygouris-Coe, & Fiedler, 2007).

Synchronous: A type of communication in which those communicating do so together in real time. An example is a chat room. (Palloff & Pratt, 1999).

Telecourse: College credit or continuing education course in which 100% of the instruction is delivered by two-way (or more) videolinks (North Carolina Community College System, 2004).

Traditional: College credit or continuing education course in which the instructor and students meet face-to-face, according to a designated schedule and which involves no electronic method of delivery (North Carolina Community College System, 2004).

Webinar: A live online educational presentation during which participating viewers can submit questions and comments (Merriam-Webster, 2014).

Limitations

Limitations within the study took place due to aspects of the research design that were outside the control of the researcher. These limitations or weaknesses may possibly impact the results and the internal validity of the study. First, the study was restricted to only NCCCS full-time and adjunct faculty and may not be applicable to other PD programs within North Carolina educational institutions or other states. Second, the PD website was funded and maintained by the NCCCS, which could impact the site content and development and was outside the control of individual colleges and people. A third issue was that not every full-time and adjunct faculty member was aware of the PD resources that exist, and this may indirectly impact the practices and resources offered on the site, as not all opinions would be heard. Fourth, I am a community college faculty member who was hired based upon education and work experience, without

formal training in teaching. As a result, I sought out PD resources in education in order to gain additional skills for the classroom. This proactive position was not necessarily representative of all community college faculty.

Assumptions

The research study was based upon several assumptions. First, institutions of higher education are dynamic organizations impacted by external factors. In order to address these ongoing factors, PD opportunities are vital in aiding faculty due to regional accrediting requirements to make informed decisions in their specialties. Second, community colleges have hired full-time and adjunct faculty for their subject-matter knowledge and practical/workplace experiences in order to keep the curricula up to date, with little attention to their teaching background and credentials (AACC, 2014). Finally, unforeseen barriers likely existed that hindered individuals from participating in PD activities.

Organization of the Study

The study is divided into five chapters. Chapter One identifies the problem, framework, need for the study, research questions and hypotheses, scope, and significance. Key definitions, limitations, and assumptions are also included in order to provide further clarification to the study's design. Chapter Two reviews the literature and includes the history of distance education, significance of offering and attending professional development activities in addition to the associated barriers, and the regulation of distance education courses. Chapter Three focuses on the research in describing the participants, the process for collecting data, and the method used to evaluate it. Chapter Four discusses results and assesses them by hypothesis. Chapter Five concludes the study by discussing the implications of the findings and providing recommendations.

CHAPTER TWO: REVIEW OF THE LITERATURE

In a quest for quality and with the absence of regulation in the distance education arena, the federal government worked in concert with the Council of Higher Education Accreditation (CHEA) to ensure quality in college course delivery to the students. This arrangement resulted in regional accrediting agencies promulgating standards and policies for online distance education, some of which were specifically for faculty professional development. In this literature review, I gave an overview of the history of distance education, its regulation, policy developments in community colleges to address those regulations, characteristics of full-time and adjunct faculty who teach at community colleges, and the provision of PD to meet those ends. I then discussed the literature regarding faculty members' skills teaching online and PD. Lastly, I addressed the conceptual framework of adult learning theory and its mindset. I posited that even though conditions for adult learning were not optimal, faculty with a growth mindset had more positive (high) attitudes regarding skills and institutional resources. Faculty with a fixed mindset had more negative (low) attitudes. I further proposed that these mindsets varied across the dimensions of technology, communication, time, online education, and content.

Distance Education: A Historical Overview

The introduction and expansion of distance education within the country's colleges and universities is an example of the challenges our nation's higher education institutions have faced. These institutions first started out in the colonies, had a religious denominational affiliation, and became more 'modernized' in the late1800s when small, non-affiliated liberal arts colleges opened. The start of the twentieth century saw the expansion of education due to the Morrill Acts of 1862 and 1890, the Hatch Act of 1887, and Smith-Lever Act of 1914. This legislation, and others, along with industrialization, two world wars, and an expanding population, created a

demand for individuals educated in industrial fields, in addition to a focus on research to improve farming methods. As colleges were being established and expanded, a form of distance education through correspondence was already present in 1881.

The first higher education institution that provided instructional materials to individuals at a distance in the United States was the Chautauqua Correspondence Colleges in 1881. Two years later, the State of New York authorized the college to award both diplomas and degree programs to students who were off-campus. Advancements in distance education continued to occur with the arrival of the new technology of radio and television, in the 1910s and 1920s respectively. The State University of Iowa started on-air broadcasts in 1934, and aired 400 programs within five years. From1961-67, interstate educational broadcasting was created when DC-6 airplanes equipped with broadcast transmitters flew over six states and was known as the Midwest Program of Airborne Television Instruction. This was the creation of interstate education by satellite through the broadcasting of classes across multiple states.

The 1960s continued to see the expansion of distance education both in the US and in countries such as Great Britain, Germany, France, and Greece, through the use of “multimedia instructional packages” (Casey, 2008, p. 46). The *Public Broadcasting Act of 1967* laid the foundation for courses to be aired when the first full course to be broadcast occurred in 1970 at Coastline Community College, CA. Each technological advancement allowed more individuals to attend institutions of higher education at a distance and not be required to be face-to-face with their instructors. The final barrier was crossed in 1991, with the use of personal computers and the World Wide Web to reduce costs and create a virtual environment with course management software.

This software, in addition to the availability of the Internet, enabled educational institutions to offer classes at a distance that became a true convenience to students. By the 1997-98 academic year, the United States had approximately 1.6 million students in distance education courses (U.S. Department of Education, 1999). By fall 2002, 1.6 million students were still enrolled in at least one online course and 578,000 of them completed their entire program online (Allen & Seaman, 2003). After 2002, enrollment numbers increased at an average of 2.1% annually through the fall of 2010 (Allen & Seaman, 2011). These numbers were based on individuals enrolling in at least one online course. To complement this study, the Institute of Education Science (IES) analyzed enrollments and course offerings at both two-year and four-year Title IV, postsecondary institutions. The IES published their results in the *Distance Education at Degree-Granting Postsecondary Institutions: 2006-2007* in which it analyzed 4,200 colleges. Of that total, 2,720 institutions offered college-level credit online, as well as hybrid/blended learning, or other distance education courses. The numbers were further divided into 1,130 two-year colleges having an enrollment of 4,927,000, and 1,590 four-year colleges with 7,226,000 students (Parsad & Lewis, 2008). As of 2008, 11,240 degree programs can be completed entirely through a distance education programs.

Consistently increasing enrollment numbers demonstrated the advantages for students of the flexibility in scheduling, together with the integration of coursework into one's schedule. While students received these added benefits, the new educational delivery methods also allowed for-profit educational institutions to capitalize on these resources. By 2007, there were 80 two-year for-profit and 240 four-year for-profit academic institutions (Parsad & Lewis, 2008). As the educational landscape changed from traditional classroom instruction (in which the student and instructor are in the same space and time) to new forms of technology that made possible

students and instructors being separated by time and place. Technological innovation outpaced higher education regulatory frameworks and concerns about the quality of distance education arose from the federal government and were passed on to the accrediting bodies (Eaton, 2001).

Regulating Distance Education

The new education delivery methods, in which classes occurred either in a hybrid manner (i.e., part of the class is face-to-face and part is online), or another method in which the class was 100% at a distance caused the federal government and regional accrediting agencies to implement standards for all accredited institutions. The Institute for Higher Education Policy (2000) wrote *Quality on the Line: Benchmarks for Success in Internet-based Distance Education*. They evaluated six academic institutions using seven different criteria in order to assess the quality of their Internet-based distance education. The college's support of the faculty was one of the topics and ranked as an "essential [aspect] for quality internet-based distance education" (Institute for Higher Education Policy, 2000, p. 25). The report recommended that:

- Technical assistance in course development be available to faculty, who are encouraged to use it.
- Faculty members are assisted in the transition from classroom teaching to online instruction and are assessed during the process.
- Instructor training and assistance, including peer mentoring, continues through the progression of the online course.
- Faculty members are provided with written resources to deal with issues from student use of electronically-assessed data.

These guidelines created the resolve to validate course quality across all institutions.

One leading advocate for ensuring course standards, in addition to maintaining a self-regulated, non-governmental accreditation process is The Council for Higher Education Accreditation (CHEA). It is "a national advocate and institutional voice for self-regulation of academic quality through accreditation" (CHEA, 2006, p. 1) and is composed of a 20-person board representing 3,000 degree-granting colleges and universities and recognizes 60 different program-accrediting organizations. CHEA's board works with Congress and the U.S. Department of Education for being a national voice for voluntary accreditation and quality assurance. Their efforts affected approximately 16,144,697 students in 2001 and a total of 17,500 programs in the United States (CHEA, 2002).

In 2002, CHEA commissioned the study *Accreditation and Assuring Quality in Distance Learning* to address three major challenges: alternative design instruction, alternative providers of higher education, and expanded focus on training. The eight regional accrediting agencies within the United States are each responsible for developing their own accreditation standards, policies, and/or processes for evaluating distance education. At the same time, the federal government requires that institutions must offer the same services to their distance education students as they do for on-campus students. Seven core services were identified: institutional mission, institutional organizational structure, institutional resources, curriculum and instruction, faculty support, student support, and student learning. CHEA (2002) commended the regional accrediting agencies for their "thoughtful and comprehensive response" (p. 1) to implementing new review procedures in order to assess the seven core areas. As a result, each college must meet regional accrediting standards for faculty credentials and use of technology.

For the southeastern United States, higher education accreditation is largely done by the Southern Association on Colleges and Schools (SACS), a CHEA organization which oversees

eight regional accrediting agencies. SACS standards cover not only credentialing at faculty hire regarding disciplinary knowledge, but now also ongoing PD in distance education. Accreditation requirements must be met as defined by SACS Core Requirement 2.8 (2012) and Comprehensive Standard 3.7. In addition, new and current faculty teaching online courses must also demonstrate that they have received proper training, as outlined in SACS' *Distance and Correspondence Education Policy Statement* (SACS, 2012).

Policy Developments in the North Carolina Community College System

With these guidelines incorporated into the regional accrediting agencies' procedures and integrated into the operations of the accredited academic institutions, it is the responsibility of the 58 community colleges in North Carolina to meet the distance education standards articulated by SACS. Each campus is individually accredited by SACS, and the administration is responsible for executing the standards based on their campus' distance education presence and college's available resources. These campus enrollments range from 1,789 at Pamlico Community College to 61,947 at Wake Technical Community College. In order to aid in meeting the PD standard, the NCCCS office implemented the first state resource, Virtual Learning Community (VLC), in 1999 and the second, the North Carolina Network for Excellence in Teaching (NC-NET), in 2003. Each resource provides full-time and adjunct faculty with PD opportunities related to topics such as course content, classroom instruction, the different learning management systems that can be used in face-to-face meetings, and online content facilitated by an instructor or as self-paced modules. Through the Tech-Prep Education program and CIP projects, faculty PD opportunities are integrated as part of the process and are discussed further below. These opportunities permit all faculty to remain active in instructional best practices generally, along with those of their field of study, and incorporate current standards

into their teaching as well as foster a collegial environment (Hanna, 2003). Also, these programs may reduce "stagnation and burnout by providing faculty with innovative and challenging ways to keep their teaching fresh" (Murray, 2002, p. 51). Finally, the different programs aid both the individuals and colleges in meeting accreditation standards, while not adding additional responsibilities to each campus. However, though accreditation standards are met, there is the question of faculty attitudes towards the PD offered. Are faculty learning—that is, are they gaining skills and do they have access to the resources they need—or are they merely checking a box for accreditors?

Colleges today are faced with a diverse set of teaching challenges that range from offering quality courses that meet students' differing learning styles, to offering individual classes and maintaining quality programs (Harwell, 2003). A key component to offering quality programs is hiring qualified faculty. Once hired, they are expected to not only maintain their expertise in the field, but remain current in distance education. With accreditation at stake, college administrators expect faculty to continually improve in both their field of study and be conversant with the ongoing changes in technology (Brooks, 2010; Hanna, 2003). By remaining active in their fields, faculty are able to incorporate current trends into their classrooms (Hanna, 2003). Outside of joining professional organizations, PD is the primary means for faculty to learn current trends in each of the above areas and understand the diverse student population that is entering their programs. Moreover, faculty PD indirectly "deepens the breath of the collegiate environment and enriches the overall campus atmosphere" (Nelsen & Siegel, 1980).

With all the positive attributes associated with a college instructor who seeks continual improvement, barriers do occur which hinder this process. First and foremost are a lack of time and scheduling conflicts (Brooks, 2010; Taylor & McQuiggan, 2008;). Coordinating PD with

faculty schedules can be cumbersome due to the college calendar, as well as whether the college offers release time. The next barrier is assessing faculty needs and interests. Campuses make a good faith effort to provide quality professional opportunity options, but do they actively seek faculty input or are they organized by administrators (Malnarich, 2008)? This situation may lead some faculty may feel there is a mismatch between topics offered and self-assessed PD needs. Finally, Taylor and McQuiggan (2008) find that lack of institutional recognition and incentive, and unfamiliarity with different PD opportunities prevent individuals from seeking continued educational opportunities in their areas of interest. Therefore, the success of a PD course/workshop/program can be directly or indirectly contingent upon who plans the event and the degree to which faculty is included in the planning. Potential participants may feel the event to be a waste of time if the activity directly does not relate to their course content.

Taylor and McQuiggen (2008) suggest that providing a variety of incentives to a college's faculty (e.g., time off, compensation, recognition, and being part of the planning process) are a few ways of acknowledging both the faculty's value and their commitment to PD. Otherwise, by not recognizing them, the college is affecting the overall work environment. As such, college administrators may need to be more proactive in offering both a variety of opportunities and supporting individual efforts. As each faculty member seeks self-improvement, the integrity of the institution is strengthened.

A final barrier is cost; that is, how to deliver PD to faculty in an age of declining state resources to higher education. Each of the 58 community colleges operates within an individual budget that is allocated based upon a three-year average based on the value of student FTEs (full-time equivalent) (NCCCS, 2012; SBCC, 2011). The question arises as to how colleges can offer diverse PD opportunities for their faculty within the annual operating budgets. The NCCCS

addressed this challenge at the system office by allocating the financial resources and personnel to create NC-NET and VLC, in addition to supporting the different PD activities that are part of the Tech-Prep Education program and CIPs project. These initiatives and programs use the talents and skills of their employees from central office and among the 58 campuses in order to create a shared depository of educational topics that are administered free to both full-time and adjunct faculty while incurring no cost to the colleges. The present study focuses on this distance education component, particularly NCCCS's response to *SACS*' *Distance and Correspondence Education Policy Statement* and *Comprehensive Standard 3.7.3* which requires "the institution [to] provide ongoing professional development for faculty as teachers, scholars, and practitioners" (SACS-COC, 2012, p 31).

An Overview of Full-time and Adjunct Faculty who Teach at Community Colleges

Though each campus is responsible for hiring its own qualified faculty (both full-time and adjunct) that meets enrollment demands, statistics related to instructors are kept at the system level. The NCCCS provides classes traditionally in the classroom and at a distance through its 58 individual colleges. According to its 2012 fact sheet, the current system enrollment is approximately 850,000 students, who have the opportunity to enroll in 248 curriculum and 45 continuing education virtual courses. In 2005, the system conducted a review of enrollment trends which revealed a growth of online students from 16,740 students to 155,556 students between 1998 and 2004, which is a 92.9% increase in eight years (NCCCS, 2005). This growth was facilitated by the advancement of technology that enables students to enroll in classes both in traditional settings and at a distance where the student and faculty are in two different locations. These different delivery formats have created an environment in which faculty are consistently learning technological skills and keeping current in their course content.

To work within this dynamic environment and serve a diverse student population, the system employed approximately 13,800 faculty (NCCCS, 2013).

Full-time community college faculty have traditionally not been trained in the theory and practice of education (NCCCS, 2002), but enter the field based on their expertise, connections with the community, workforce background, and personal educational credentials. Due to each college's differing program offerings (including college transfer degrees and vocational certifications), a diverse faculty widely different educational qualifications, including certifications, associate degrees, bachelor degrees, master degrees, doctoral degrees, and professional degrees (AACC, 2014), is needed. This array of educational credentials and work experiences illustrates the importance of providing PD opportunities centered on community college operations—from changes in technology to best practices in instruction.

Carroll-Barefield, Smith, Prince, and Campbell's (2005) research focused on different learning management systems where faculty are able to facilitate real-time, two-way interactive video and audio networks such as *Camtasia* and *Tegrity*. These systems foster a community within the classroom in order to simulate the traditional face-to-face classroom setting. Though the new technology enhances the course experience for the students and instructor, their research revealed that faculty responded that more time is needed to facilitate an online class compared to a seated one. They found that faculty encountered a 75% increase in time when designing an online, in addition to an increase of 125% in time to conduct the online version (Carroll-Barefield, et al.,2005, p. 4). Berge, Muilenbury, and Van Haneghan's (2002) research revealed similar barriers that included faculty compensation and time, organizational change, and lack of technical expertise/support. It is through administration support that PD becomes a priority (Wallin, 2003) and faculty receive the necessary skills and training needed to adapt to the

changing instructional environment that is occurring within the North Carolina Community College System.

As full-time faculty are hired for the community college's programs, adjunct faculty are also part of the college's operations and are contracted from semester-to-semester in order to meet course enrollments. In 2001, 66.5% of all community college instructors were adjunct (Phillippe & Sullivan, 2005); in 2003, the percent of adjunct faculty at both four- and two-year academic institutions was 44% (Cataldi, Fahimi, & Bradburn, 2005). These individuals bring both their educational credentials and their work experience into the classroom. Their diverse backgrounds, connections, and skills can also provide academic departments and institutions with current standards and operations when planning internships, tutoring opportunities, developing curriculum, and serving on advisory boards (Green, 2007; Wallen, 2004). Finally, they are helping institutions meet accreditation standards by having appropriate degrees.

While adjunct faculty seek positions for reasons that vary from wanting to give back to the community to earning extra money, they are also providing the college with different levels of flexibility that include expand course offerings, and the number of sections able to be offered. Finally, their positions also reflect a point of flexibility within the budget because adjunct faculty are paid at one-third the rate of full-time faculty (Green, 2007; Phillippe & Sullivan, 2005; Wallen, 2004). This is of special significance due to the reduction in state support and the fluctuating enrollments of the institutions.

However, for all those benefits, the negative is that they traditionally have neither a background in education nor do they generally follow best practices in teaching (Betts & Sikorski, 2008; Green, 2007; Wallen, 2004). As a result, it is important for them to be as part of the PD process as full-time faculty. This reinforces the NCCCS's desire to provide PD

opportunities for adjunct instructors that are free, flexible, and relevant due to the number of adjunct faculty that are hired by community colleges. By fostering an environment where all faculty are supported by campus administration in providing different PD opportunities in addition to the current technology tools, it creates a campus and environment that "furthers both the new and the traditional missions of the community college" (Foster, 2004, p. 78).

Providing Professional Development

As enrollments increased in online courses due to the advancements of technology in the late 1990s and into 2000, national organizations began to issue reports on the impact of distance education in higher education. In 2000, the Institute of Higher Education Policy ordered a study that "examined the benchmarks by studying active distance learning programs at several institutions" (p. 1). Two years later, CHEA commissioned two reports. The first, *Accreditation and Assuring Quality in Distance Learning,* focused on learning "the scope and impact of distance learning on higher education today" (CHEA, 2002, p. ii). The second report, *Specialized Accreditation and Assuring Quality in Distance Learning*, surveyed 59 program accreditors in order to "to learn whether and to what extent these accreditors are involved in the accreditation of distance learning" (CHEA, 2002, p.1).

In response to these course delivery changes at the turn of the new millennium, community colleges throughout the United States started to inquire into what faculty skills are needed to teach online and providing them PD offerings. For instance, in 1998 and 2001, the NCCCS worked to create resources available to all faculty in order to aid them in their instruction and foster further PD activities. The first system resource was developed by a Distance Learning Consortium and Virtual Learning Community (VLC) Steering Committee whose initial goal was to create a support center for course development of online classes that were to be shared among the 58 community college campuses. Their work created a state

resource was created as a collaborative space for educators to have access to online learning and support services that included course content and PD opportunities. Over the last 14 years, their services have expanded to include quality strategies in course evaluation and instruction, PD instruction for various software, copyright and fair use issues, and a certified online instructor course. All these items are offered without charge and include conference presentations, webinars, online courses, and onsite training. To facilitate the diversity of services, the VLC is divided into three centers: Professional Development, Technology, and Quality Assessment. Each center is located on a different campus that is also located in a different part of the state. This structure places the center employees on campuses where they are able to work with individuals who have specific expertise in their field and, at the same time, with other faculty and campus administration from across the state… in order to aide their continued development of best practices.

In 2001, H. Martin Lancaster, President of North Carolina Community College System, and James J. Woody, Jr., Chairman of the State Board of Community Colleges, led a team to work with the Center for Occupational Research and Development (CORD) to create and distribute a PD survey in November and December of that year. Their goal was to assist "with the development of local college plans for professional development and improvement" (CORD, 2002, p. 2). The results of the survey revealed eleven recommendations that provided a foundation for the NCCCS in their planning for the future and in creating a website that provides PD services at no cost to participants. This publicly-posted site provides faculty with a variety of course topics offered in different delivery methods. Individuals can enroll in face-to-face, hybrid learning environments, and online courses that are either self-paced or instructor-led. Course delivery depends on the participant's needs, delivery needs, and purpose of the course. As a

result, NC-NET continues to strive to provide convenient, affordable, and relevant courses that meet the interests/needs of college faculty across the state. These topics are facilitated by a peer-evaluated and peer-moderated structure in addition to the three regional centers assigned specific disciplines for developing faculty resources (NC-NET, 2013).

In addition to the VLC, NC-NET, and the biannual state conference, PD sessions are also provided through the Tech-Prep Education and CIP programs. Each program is part of the *Carl D. Perkins Career and Technical Education Act of 2006*. The Tech-Prep program offers students "at least two years of secondary and two years of postsecondary education" (U.S. Department of Education, 2007) in specific career fields. And the CIP Program, or Curriculum Improvement Project, provides PD opportunities that concentrate on topics that include technology training, learning new equipment, and organizing courses into modules. Recognizing the continual changes in faculty disciplines, both of these programs provide PD opportunities to both full-time faculty and adjunct faculty.

Outside of these four state programs, other options include attending conferences, participating in webinars and online courses, and attending sessions that are hosted on- or off-campus. These events can be sponsored by their own colleges, professional organizations, vendors or industries, or by the NCCCS. These different delivery methods and sponsorships enable faculty to select the best PD opportunity for their interests, needs, and schedules. Course topics include: (1) the classroom impact of institutional changes on their student populations; (2) incorporating and using technology; (3) offering best practices in professional fields; (4) gaining knowledge on learning styles; and (5) providing introductory training for employees who are not traditionally/academically- trained instructors (Hahns-Vaughn, Zygouris-Coe, & Fiedler, 2007; Harwell, 2003; NCCCS, 2011).

While the NCCCS worked to create PD resources that are flexible and affordable for both participants and the colleges, the federal government and regional accrediting agencies started implementing different principles that must be met by accredited colleges. In North Carolina, each of the 58 community colleges is required to adhere to the standards set forth by SACS-COC for professional development. Current accreditation guidelines include three specific passages that address credentials and PD. They include the following:

- Comprehensive Standard 3.7.1 – "The institution employs competent faculty members qualified to accomplish the mission and goals of the institution. …" (SACS-COC, 2012, p. 30).
- Comprehensive Standard 3.7.3 – "The institution provides ongoing professional development of faculty as teachers, scholars, and practitioners" (SACS-COC, 2012, p. 31).
- Distance and Correspondence Education Policy Statement – "Faculty who teach in distance and correspondence education programs and courses receive appropriate training" (SACS-COC, 2010, p. 3).

As a result, providing these different PD opportunities enable faculty to participate in courses that are flexible to gain new knowledge while satisfying accreditation guidelines.

Adult Learning Theory and Faculty Professional Development

As academic institutions consider the incorporation of different PD opportunities for their faculty, gaining an understanding of adult learning is another element to be considered. Malcolm Knowles coined the term andragogy, which identifies adults as having a different learning style from children, known as pedagogy (Herod, 2012). Andragogy is learner centered where the participants are self-directed, intrinsically motivated, participate in informal learning

environment, collaboration among students and teacher are encouraged, and self-assessment evaluation occurs (Herod, 2012). Knowles stated,

> The major problems of our age deal with human relations; the solutions can be found only in education. Skill in human relations is a skill that must be learned; it is learned in the home, in the school, in the church, on the job, and wherever people gather together in small groups (Smith, 2002).
>
> By understanding the different andragogy elements and fostering an environment of ongoing educational activities for faculty, institutions would be able to maximize their resources effectively in offering PD opportunities that are both engaging and relevant to the participants.

As individuals progress through life, Knowles' research discusses the transition from learning in a teacher-centered method to a learner-centered method. Dweck's research published in the book *Mindset*, advances Knowles' research by identifying two types of learning perspectives, fixed and growth. Her research reveals that as children, the way individuals are praised and positively reinforced, affects their learning processes as they become adults. In a fixed mindset, individuals seek success in proving they are smart and talented. In contrast, the growth mindset is open to stretching their selves in developing new skills (Dweck, 2006).

At young ages, individuals who are identified by tests, praised on their abilities, and receive positive labels develop a fixed learning perspective. This environment creates the "mindset" where individuals internalize that they are born with certain skills and talents that cannot be changed. If faced with an obstacle, they do not "want to expose their deficiencies" (Dweck, 2006, p. 18) and would not attempt the task. Instead, when completing an assignment, they are only interested in whether their attempt/s are right or wrong and depending on the

results, they are either self-validated with a positive response or internalize the feeling of failure if the attempt/s are incorrect. This "creates an urgency to prove yourself over and over" (Dweck, 2006, p. 6).

In contrast, individuals with a growth mindset internalize a perspective that "your basic qualities are things you can cultivate through your efforts" (Dweck, 2006, p. 7). As children, feedback centers on effort instead of completing an exercise as right or wrong. These individuals then adopt a positive and transformative perspective. They are continually evaluating their environment without passing judgment on their actions. And when presented with challenging problems, they seek out understanding and repeat the exercise until they comprehend it due to the "implications for learning and constructive action (Dweck, 2006, p. 215). The growth mind set strives for understanding through ongoing learning and motivation.

As institutions develop different PD activities, gaining an understanding of andragogy and the two different mindsets, aids organizers in how to maximize the use of technology, communication, time, online education, and content. Adult learners have developed their personal learning styles over time through personal preferences and experiences. "At the same time, scientists are learning that people have more capacity for lifelong learning and brain development than ever thought" (Dweck, 2006, p. 5). By gaining an understanding of their learning preferences may help in overcoming the different PD barriers as in type of course offerings in content, method of delivery, when, and if faculty are acknowledged for their participation, to name a few.

Summary

Over the last 200 years, individuals have enrolled in distance education courses that initially started from mail delivery; later through air broadcasting; and now use computers and

software technology. Each new educational delivery method created a regulatory response from the Federal Government and the regional accrediting agencies. Today, CHEA works with the eight regional accrediting agencies, the U.S. Congress, and the U.S. Department of Education in order to ensure self-regulatory standards in seven core areas along with faculty credentials and the use of technology. In order to meet regional accrediting agencies standards, SACS's for example, Comprehensive Standards 3.7.1 and 3.7.3 and the Distance and Correspondence Education Policy, NCCCS allocated resources towards creating the VLC and NC-NET in addition to supporting the PD opportunities that are part of the Tech-Prep Education program and CIP projects. These PD activities, other conferences, webinars and online courses, and attending sessions that are hosted on or off their own campuses provide full-time and adjunct faculty with different options along with overcoming participation barriers and selecting courses that align with their preferred adult learning styles. These events can be either sponsored by the NCCCS, individual colleges, professional organizations, or vendors and industries. As a result of the diversity of community college faculty and the ongoing developments in distance education, the study is designed to analyze both full-time and adjunct faculty members' attitudes, skills, and institutional resources as they relate to online teaching, course development, and PD opportunities.

CHAPTER THREE: METHODOLOGY

Chapter Three addresses the methodology used to study full-time and adjunct faculty's perception of PD activities as they relate to the method of instructional delivery, and the level of competence and confidence they have to develop content for online classes. The methodology used contains the following elements: research questions and hypotheses, research design, study feasibility, population studied, instrument used, data analysis, conceptual framework, threats to internal and external validity, and summary.

Research Questions and Hypotheses

The NCCCS has promoted different PD opportunities for both full-time and adjunct faculty throughout system initiatives such as the VLC, NC-NET, Tech-Prep Education, and CIP projects. The purpose of this study is to analyze full-time and adjunct faculty members' attitudes, skills, and institutional resources towards PD opportunities as they relate to online teaching and course development. Various delivery options are offered by VLC, NC-NET, Tech-Prep Education, CIP, and other entities using self-paced online courses, instructor-led online courses, even face-to-face and onsite courses. The state-sponsored endeavors are available at no cost to participants, and the other resources may or may not require a monetary fee. As a result, the following research questions have been developed:

1. What are the attitudes of faculty towards professional development for online teaching and course development? Do faculty tend to have growth as compared to fixed mindsets?
2. What are the skills faculty have for online teaching and course development?
3. What do faculty perceive as the institutional resources for professional development for online teaching and course development?

4. Is there a difference in the attitudes, skills, and perceptions of institutional resources by faculty full-time or adjunct status?

As the research questions are exploratory, hypotheses directed at comparisons between full-time and adjunct faculty. They are:

$H_0$1 – There is no statistically significant difference in faculty attitudes towards professional development for teaching online and course development.

$H_0$2 – There is no statistically significant difference in faculty skills for online teaching and course development.

$H_0$3 – There is no statistically significant difference in faculty perceptions in the availability of institutional resources for online teaching and course development.

$H_0$4 – There is no statistically significant difference between faculty full-time and adjunct faculty in attitudes, skills, and perceptions of institutional resources.

Research Design

The purpose of this study is to analyze full-time and adjunct faculty members' attitudes, skills, and institutional resources towards PD opportunities as they relate to online teaching and course development. First, Dr. Aydin's questionnaire, *Online Teaching Roles, Competencies and Resources Questionnaire* (OTRCRQ), will be used because the questionnaire addresses the different components of teaching online and developing online courses. Next, due to the different college locations and faculty schedules, a quantitative research method was selected to facilitate the collection and analysis of the results. Anderson and Kanuka (2003), Creswell (1998 & 2009), and Fowler (2009) provided the foundational information in conducting the questionnaire methodology. The Internet-based questionnaire was built and maintained in Qualtrics® Survey

Software. East Carolina University has received an approved license for their faculty, staff, and students to use this software.

Participant responses will be analyzed by using either the independent samples t-test or paired sample t-test. The test selected will depend on the concerned variable in order to detect any difference between the groups of faculties on their preferred PD delivery method and their thoughts regarding institutional support, the competencies, and confidence needed to develop/teach online.

Study Feasibility

In order to ensure there is study feasibility, all full-time and adjunct faculty from the 58 different community colleges will be selected to participate in the study. Upon IRB approval, each of the North Carolina community college presidents will be contacted by the College President of Catawba Valley Community College in order to request permission to contact their full-time and adjunct faculty due to the NCCCS does not have a centralized email system and each college operates their email distribution lists differently. The approval will allow the college faculty to receive an online PD questionnaire via their college's authorized email accounts. Upon receiving approval from the college president, the president is asked to forward the email to the college's appropriate person who maintains their campuses full-time and adjunct Spring 2014 email lists. Sixteen presidents approved their colleges to participate in this research study.

Population Studied

The specific site of this study is the North Carolina Community College System (NCCCS). Community colleges educate the majority of all students in U.S. post-secondary education. There are 1,132 community colleges throughout the United States who served over one million associate degree and certificate seeking students in the 2011- 2012 academic year

(AACC Fact Sheet, 2014). Given the sheer number and diversity of students across a host of factors, community colleges continue to expand their course offerings, especially in the area of distance education (King & Lawler, 2003). As community college systems vary across the United States, it seems important to focus on a singular system with a particular history in responding to distance education accreditation demands. As one of the largest community college systems, and given efforts at creating system level opportunities for PD, NCCCS is an apropos study site.

Full-time and adjunct faculty who work within the North Carolina community colleges were selected as the population for this study. Participant responses will be compared by using either the independent samples t-test or paired samples t-test. The test selected will depend on the concerned variable in order to detect any difference between the groups of faculties on their preferred method of PD delivery, thoughts regarding institutional support, the competencies needed to develop/teach online, and confidences to developing/teaching online courses. To ensure the integrity of the study, G*Power software was used to determine a sample size by configuring t-test scores based on the test of Means Difference between two independent means (two groups) and the type of power analysis of *a priori* assumptions. Next, the required sample size, given α, power, and effect size, was determined. A two-tail t-test was selected with α error probability of 0.05 and power of 0.95. These parameters created a sample size of 210 individuals out of the 13,876 full-time and adjunct faculty. From this participant pool of 210 individuals, 105 full-time and 105 adjunct faculty were calculated to be the necessary number of individuals to conduct an analysis with effects of moderate size.

Instrumentation

A direct-data questionnaire was used in this study in order to collect information from individuals by means of a questionnaire (Thomas & Brubaker, 2008). Questions employ a 5-point Likert-type scale. The questionnaire is internet based, using Qualtrics, and includes three sections: consent document, demographic questions, and questionnaire items (see Appendices D and E). The consent document notifies participants of their right to either participate or decline to participate in the questionnaire. The importance of this questionnaire is to learn about their views of PD as they relate to delivery method, institutional support, personal online competencies and confidence in developing/teaching an online class. Individuals who chose not to participate are removed from the sample pool in the next screen. Demographic questions consist of the participant's academic department, years of online instructional experience, the number of hours of PD training obtained concerning online learning in the past 12 months and full-time or adjunct status. Questionnaire items can be divided as follows: descriptive statistics, technology, communication, time, online education, and content. Questions regarding descriptive statistics and attitudes correspond to Research Question 1, Confidence. Questions of skill relate to Research Question 2, Competencies. Questions of resources correspond to Research Question 3, Institutional Support. Finally, questions in differences in attitudes, skills, and perceptions of institutional resources between faculty full-time and adjunct status relate to Research Question 4.

C. H. Aydin's questionnaire, *Online Teaching Roles, Competencies and Resources Questionnaire* (OTRCRQ), was selected for the study due to the inclusiveness of the questions and how they related to this study's inquiry. Dr. Aydin gave approval to use the questionnaire on October 20, 2013 (see Appendix F). The questionnaire is divided into three competencies (skills, attitudes, and institutional resources) and five factors (technology, communication, time, online

education, and content). Next, each factor question contains two sets of five-point Likert scale in order to respond to "how they perceived the competencies and resources for successful online teaching" (Aydin, 2005) and "their responses about the extent to which they think that they possess these competencies and resources" (Aydin, 2005). Before distribution, questionnaire validation was done by conducting a literature review, having the questions reviewed by three content experts, and field tested. Cronbach's Alpha analysis was used to test questionnaire reliability. Participants' responses to their perception of their role as instructor (0.873) were higher than the reliability of the participants' frequency of participating in that role (0.829) (Aydin, 2005). Also, the reliability that reflects the participants' perception of the competencies and resources (0.954) was nearly the same as their feelings on possessing test competencies and resources (0.950) (Aydin, 2005).

The questionnaire contains a total of 120 questions divided into different sections. The first section of five questions addresses participants' personal information about the college where they work, department, years of online instruction, and the number of PD training sessions taken online. The second section contains eleven questions regarding PD and its method of delivery. Individuals are asked to respond to one set of five-point Likert scale that range from Strongly Disagree to Strongly Agree. The third and final section is composed of 52 questions that are divided into the five factors. Each factor contains a resource, skill, and attitude component. Each participant is asked to respond twice to each question by using a five-point Likert scale. The first response asks for their perceived necessary attitudes, skills, and institutional resources to teaching online and the second set pertains to their belief on to what extent they possess these abilities. By answering the question twice in order to address personal views and ideals, the 52 questions double and become a total of 104 questions. The questionnaire

therefore contains a total of 120 questions once the 104 questions are added to the 16 descriptive questions. As a result, the responses will provide insight into what individuals are receiving in regards to PD training, their preference about delivery of PD training, and what institutional support is available to online instructors.

Data Analysis

Descriptive statistics will be calculated for both the demographic questions and the individual questionnaire items. A vector will then be created for each section of the questionnaire (i.e., resources, skills, and attitudes). The comparison data was derived from comparing the mean and standard deviation scores in addition to conducting a two-sample t-test. The t-test was selected in order to compare the similarities, or differences, in the responses from the two groups for quantitative variables. Next, the paired samples t-test results enabled the data to be evaluated in relationship between the two categorical variables, full-time and adjunct instructor's views of their PD participation, preference of delivery method, institutional support, level of competence in developing/teaching an online course, and their potential over-confidence in online instruction.

Conceptual Framework

The framework of this study is based upon three research concepts. First, Knowles's (1990; Lawler, 2003) research on adult learning theory is used to understand the learning styles of adults which is centered around self-directed learning, motivation, informal learning environments, collaborative settings, and self-evaluation. Next, Dweck's (2006) research on an individual's mindset between growth and fixed perspectives provides the second research concept where individuals accept new ideas and concepts as a challenge through effort (growth), or is assessed with only a right/wrong outcome (fixed). The research of Taylor and McQuiggan

(2008) and Brooks (2010) forms the third part of this framework, which addresses the barriers to PD. Items cited as barriers include time and scheduling conflicts, lack of inclusion in the college planning process, offering courses that do not meet the individual's needs and interests, no incentives, and lack of recognition for those who pursue continue education courses.

Threats to Internal and External Validity

When conducting a research study, items may occur that affect the results and their interpretations by the researcher. Creswell (2009) states "validity in quantitative research refers to whether one can draw meaningful and useful inferences from scores on particular instruments" (p. 235). As a result, the researcher must consider any internal and external validity threats to the study. Internal validity threats are defined as "experimental procedures, treatments, or experiences of the participants that threaten the researcher's ability to draw correct inferences from the data about the population in an experiment" (Creswell, 2009 p. 230). Upon review of the questionnaire, several internal validity threats were identified. The first area of concern is the ability for both full-time and adjunct faculty to have access to reliable technology and a professional email account since the questionnaire will be distributed electronically. Second, participants who complete the questionnaire do so as a self-report without independent verification. The third item is achieving an equal distribution of PD opportunities to both full-time and adjunct faculty.

External validity is defined as "when experimenters draw incorrect inferences from the sample data to other persons, other settings, and past or future situations" (Creswell, 2009, p. 229). First, inconsistencies may arise due to differences in the size of the community colleges and how they acknowledge individuals who are actively involved in PD activities. Next, community college systems may promote and offer PD activities different ways.

Questionnaire Deployment

An Internet-based survey was used in this study. Qualtrics® Survey Software was used to collect the data. The sampling frame included all full-time faculty and adjunct faculty members who work within the NCCCS. Upon receiving ECU IRB approval, each of the North Carolina community college presidents were contacted by the College President of Catawba Valley Community College in order to request permission for their full-time faculty and adjunct faculty to participate in a research study. This process was selected due to the NCCCS does not have a centralized email system and each college operates their own email distribution lists differently. Ten presidents approved the research to be distributed to their faculty and asked for their college's internal review board for approval whereas 13 only requested the dissertation chapters for review before approving distribution.

With a sampling frame of approximately 13,000 full-time faculty and adjunct faculty members who are employed across the 58 community colleges, seven colleges declined to participate; ten colleges required an internal IRB review with all approving the study; and13 presidents directly approved distribution to their campuses. Communication was not received from the other 28 colleges after being contacted twice, once by the college president at Catawba Valley Community College and then followed up a second time by the researcher. In total, 17 institutions with a total number of 2,335 full-time and adjunct faculty comprised the adjusted sampling frame for this study. In total, 214 individuals responded to the questionnaire during the data collection period for an overall response rate of 9.0%. However, given the breadth of the sampling frame, the key for generalizability is not response rate but representativeness.

Challenges with Instrumentation

This study involved one instrument that was developed by Dr. Aydin, *Online Teaching Roles, Competencies and Resources Questionnaire* (OTRCRQ). Three major challenges with the instrumentation were discovered during the administration of the questionnaire that could possibly affect the results of the study.

First, the questionnaire was composed of 52 questions, answered twice, and16 descriptive questions. Doubling the 52 OTRCRQ questions created a total of 104 questions where full-time faculty and adjunct faculty were asked to answer first on importance to online instruction and second based on personal assessment. The duplication of questions may have caused confusion because some questions were left blank by the respondents. The researcher also received two emails asking for clarity. One participant asked, "Wouldn't the left side match the right side since the survey is asking for my opinion as it relates to online education?" Finally, two presidents declined participation based on the length of the questionnaire (total number of questions) alone even though it required 10 to 15 minutes to complete.

The questionnaire was distributed by using the participant's professional email addresses. This created complications in both working with technology and accessing faculty contact information. First, only thirteen of the 58 community colleges publicly posted their adjunct faculty's contact information on their website. As a result, the research was dependent on each campus' administration to agree to distribute the questionnaire to their adjunct faculty. Second, not every college publicly posted the contact information for their employees on the college's website. Instead, an external user would have to contact a specific individual in order to again permission to access their internal network. This access was not granted to the researcher. Next, in working with publically posted information, the researcher had to depend on each college to

ensure the accuracy in reflecting all of their currently employed employees with the accurate position titles. Finally, each college president was contacted by their email and/or by office telephone. Consequently the research was dependent on the president's personal response practices when answering emails and returning phone calls.

In working with each campus within the NCCCS, two unexpected outcomes of distributing the research were discovered. First, there is a proportion of faculty who work at multiple campuses and second, not all faculty teach an online course. For example, one college does not permit the distribution of external research instruments to their faculty. However, the contact person assigned to the researcher was an adjunct at another college and agreed to complete the questionnaire. A second faculty member contacted the researcher in stating they completed the questionnaire at one location and then received it a second time at their other place of employment. As a result, they wrote and asked if they should complete the questionnaire twice. This inquiry caused the researcher to question if other faculty received it twice and only completed it once because the NCCCS records individual employment positions instead of publicly identifying if employees are employed in multiple positions at different NCCCS colleges. Finally, the researcher received four emails stating the participants would complete the questionnaire, but upon review they stopped because they only taught seated course sections. These correspondences surprised the research due to the increased number of hybrid and online classes being taught on today's college campuses.

In summary, four unforeseen challenges were met during the selection and distribution of the instrumentation. The four challenges included the questionnaire's total number of questions and format, using technology to contact NCCCS employees, accessing faculty's professional email addresses, and faculty receiving multiple *Invitation to Participate* letters from different

academic institutions. These instrumentation challenges created unknown alterations in the questionnaire responses and response rate. The response rate and representativeness are addressed in chapter 4.

Summary

The NCCCS's full-time and adjunct faculty face ongoing changes in the delivery of courses that range from face-to-face, hybrid, and fully online delivery. In this study, I explored full-time and adjunct faculty's beliefs on participating in PD opportunities, preference of delivery method, amount of institutional support, level of competence in developing/teaching an online course, and confidence in their ability to instruct online. A validated, five-point Likert scale questionnaire was used to collect participant's thoughts on the five topics. Responses were collected and analyzed using a t-test in order to compare the results as independent variables that were defined in the null hypotheses. The study results will be reviewed in the following chapter.

CHAPTER FOUR: RESULTS

The purpose of this study was to examine full-time faculty and adjunct faculty member's attitudes, skills, and institutional resources towards PD opportunities that are available to individuals who teach and develop online courses. Four research questions and hypotheses provided the foundation to answer the overarching question that regarded the faculty's views of PD as they related to delivery method, institutional support, personal online competencies, and confidence in developing/teaching an online class. The independent variables were composed of full-time faculty and adjunct faculty. The dependent variables were the three areas of online teaching and course development: attitudes, skills, and institutional resources. This chapter consists of the following: (a) a description of the participants, (b) an analysis of each research question, (c) an analysis of the null hypotheses, and (d) a description of the instrumentation challenges.

Description of Participants

Upon accepting the consent document, participants completed the demographic section of the questionnaire. The demographic section contained four questions that pertained to their department, number of years of online instructional experience, number of hours of PD training obtained during the past 12 months that regarded online instruction, and their faculty status as either full-time faculty or adjunct faculty. The questionnaire respondents (N=214) represented 156 full-time faculty and 58 adjunct faculty. GPower estimated a sample size of 105 full-time faculty and 105 adjunct faculty to be necessary to conduct an analysis with effects of moderate size. The overall numbers of respondents met the GPower conditions and were representative of both large and small campuses. The low adjunct faculty response rate influenced the effect size

and statistical significance regarding this set of participants, a consideration for follow up future studies.

Department Representation

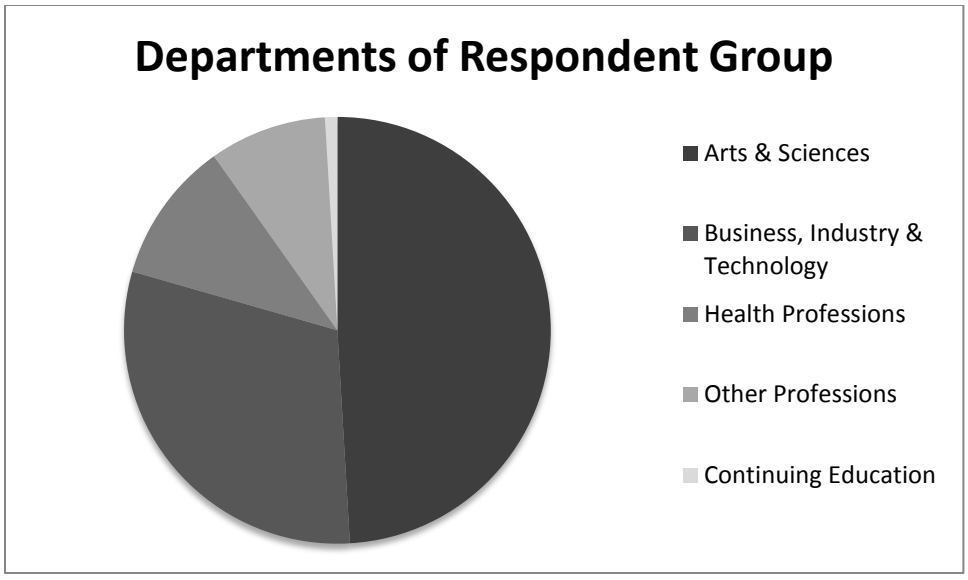
Fifty six different departments were self-reported by the participants that ranged from identifying themselves as being part of curriculum to individual departments such as Biology and Early Childhood Education. Arts and Sciences and Business, Industry, and Technology who reported the most participants, represented 27.10% of the total respondents. This curriculum representation included both the full-time faculty and adjunct faculty responses (see Figure 1 and Table A1 in Appendix H).

Online Instructional Experience

The number of years of online instruction experience by the questionnaire respondents ranged from no years of teaching to having taught classes that are classified as distance education courses for 38 years. Adjunct faculty reported more years of distance education course experience, 38 years, than full-time faculty, 25 years. Both groups, full-time faculty (M=12.20, SD=5.81) and adjunct faculty (M=2.80, SD=2.05), averaged instructional experience between 6 to 10 years (see Table 1 and Table 2).

Overall Faculty Professional Development Activity and Dispositions

The questionnaire participants reported a range of zero to 120 hours of professional development training that concerned online learning in the past 12 months. Full-time faculty reported between zero and 120 hours, in comparison to adjunct faculty, who reported zero to 80 hours of attending professional development activities that are focused on online learning. Overall, most faculty participated in 0 to 0.5 hours of professional development in the past 12 months (see Table 1 and Table 3).



Note. This figure illustrates the separation of full-time faculty and adjunct faculty academic departments into the five primary academic departments that are located on each North Carolina Community College campus.

Figure 1. Departments of respondent group.

Table 1

Characteristics of NCCCS Faculty Participants

	Full-Time (N=156)			Adjunct (N=58)		
Characteristic	Min.	Max.	Means (S.D.)	Min.	Max.	Means (S.D.)
Years of Online Instructional Experience	0	25	5.38	0	38	200
			5.58			2.14
Hours of Professional Development Training	0	120	5.03	0	80	1.87
			5.70			3.17

Note. ** $p<.05$.

Table 2

Years of Online Instructional Experience

	Full-Time (N=156)		Adjunct (N=58)	
Years	Means (S.D.)	t-test	Means (S.D.)	t-test
0-3	6.00	3.06	3.29	3.16
	5.20		2.75	
3.5-5	8.67	2.21	2.67	1.84
	6.81		2.52	
6-10	12.20	4.70	2.80	3.06
	5.81		2.05	
11-15	4.20	11.23	1.60	1.97
	0.84		1.82	
16+	0.67	2.83	0.56	2.29
	0.71		0.73	

Note. ** $p<.05$.

Table 3

Hours of Professional Development Training

	Full-Time (N=156)		Adjunct (N=58)	
Years	Means (S.D.)	t-test	Means (S.D.)	t-test
0-0.5	11.00	1.10	5.50	1.00
	14.14		7.78	
1-5	10.83	4.01	4.67	2.91
	6.62		3.93	
6-10	4.40	2.99	2.20	1.62
	3.29		3.03	
11-20	4.17	2.88	0.50	1.00
	3.54		1.22	
21-48	2.67	2.46	0.67	1.35
	2.66		1.21	
55-120	1.00	3.87	0.17	1.00
	0.63		0.41	

Note. ** $p<.05$.

Faculty Perceptions of Need, Levels of Benefits, and Willingness to Participate in Professional Development Training Related to Online Learning

Using a five-point Likert Scale the respondents answers revealed that all of the faculty either agreed or strongly agreed that there is additional need for online training (M=4.29, SD=0.87) along with benefiting from that training. (M=4.25, SD=0.86). The respondents also either agreed or strongly agreed to participate in some form of professional development training that related to online learning (M=4.30, SD=0.81) (see Table A1 and A2 in Appendix H).

Comparison of Full-time Faculty and Adjunct Faculty Perceptions of Need, Level of Benefits, and Willingness to Participate in Professional Development Training Related to Online Learning

The paired t-tests revealed full-time faculty (M=4.26, SD=0.86) felt they would benefit from some type of professional development concerning online learning slightly more so than adjunct faculty (M=4.21, SD=0.87; t(214)=0.42, p=0.67). In addition they indicated they more likely (M=4.31, SD=0.79) would participate in some form of professional development training over adjunct faculty (M=4.26, SD=0.85; t(214)=0.93, p=0.66). Adjunct faculty (M=4.31, SD=0.88) reported a higher belief in that there is a need for additional professional development opportunities related to online learning than full-time faculty (M=4.28, SD=0.87; t(214)=0.26, p=0.80). None of these differences are statistically significant.

Faculty Preferences in Preferred Modalities of Professional Development

Respondents were asked to use a five-point Likert Scale to rate their preferences in their preferred modality of professional development courses. Web-based training (M=4.14, SD=0.98) was selected as their first choice of course modality, with self-paced classes (M=4.09, SD=1.03) ranked as their second choice. Next followed classroom training (M=3.88, SD=1.10), guided

self-studies (*M*=3.84, *SD*=1.07), and monitored learning groups (*M*=3.63, *SD*=1.13). Participating in formal courses with college credit (*M*=3.44, *SD*=1.26), using resources offered by the VLC (*M*=2.75, *SD*=1.16), and offered by NC-NET (*M*=2.67, *SD*=1.07) ranked as the last three preferences by the faculty (see Table A2 in Appendix H).

Comparison of Full-time Faculty and Adjunct Faculty Preferences in Preferred Modalities of Professional Development

A paired t-test was used to analyze the modality preferences of full-time and adjunct faculty. Participating in web-based training was ranked first by both full-time faculty (*M*=4.12, *SD*=1.01) and adjunct faculty (*M*=4.17, *SD*=0.90; *t*(214)=1.34, *p*=0.74) as their first choice in preferred delivery method of professional development courses, with self-paced training concerning online instruction utilizing computer media as full-time faculty (*M*=4.07, *SD*=1.02) and adjunct faculty's (*M*=4.16, *SD*=1.04; *t*(214)=0.54, *p*=0.59) second preferred method of delivery. The faculty differed on their rankings regarding their preferences in the delivery of PD training. Classroom training, mentored learning, and guided self-studies ranked third, fourth, and fifth in preferences as it related to online. However, full-time faculty (*M*=3.37, *SD*=1.28) and adjunct faculty (*M*=3.64, *SD*=1.18; *t*(214)=1.41, *p*=0.16) both agreed that participating in a formal course offering college credit was their last choice in delivery options.

Faculty Perceptions of NC-NET and VLC

The NCCCS supports two state professional development initiatives that are available to all system employees. Results of the five-point Likert Scale revealed that 49% of the participants either disagree or strongly disagree in using the courses offered by the VLC. (*M*=2.75, *SD*=1.16). NC-NET received similar results with 50% disagreeing or strongly disagreeing with using their resources (*M*=2.67, *SD*=1.07). The paired t-test statistical results revealed that the two groups are

more alike than different between full-time faculty (*M*=2.75, *SD*=1.17) and adjunct faculty (*M*=2.75, *SD*=1.12; *t*(214)=0.01, *p*=1.00) regarding their preference to use professional development resources offered by the VLC (see Table A2 in Appendix H).

Research Question One

What are the attitudes of faculty towards professional development for online teaching and course development? Do faculty tend to have growth as compared to fixed mindsets?

Faculty attitudes were measured by using ten of the 52 questions on the questionnaire that were predetermined before distribution. The respondents (*N*= 214) were asked to complete a five-point Likert Scale: strongly disagree, disagree, neutral, agree, and strongly agree. An independent samples t-test was used to compare the average ratings for each question, and paired sample t-test was used to determine any statistically significant difference between the means of the faculty's view of importance to online instruction in comparison to their self-assessment (see Table A4 in Appendix H).

Descriptive Statistics

The research analysis revealed that the following three attitude topics were ranked over 90% as being important by all of the faculty to online instruction: (1) 95.34% of all the faculty either agreed or strongly agreed with the ability to complete a task in allocated time (*M*=4.66, *SD*=0.58); (2) the ability to not wait until the last minute to complete the planned tasks (*M*=4.65, *SD*=0.65) had 94.85% of the faculty agreeing and strongly agreeing; and (3) not hesitant to use technology in daily tasks (*M*=4.47, *SD*=0.66) received 91.84% of the faculty either agreeing or strongly agreeing.

Under the faculty's self-assessment, 83.35% of all the faculty's responses coincided with the responses related to whether the topic was important to online instruction by either agreeing or strongly agreeing. The ability to complete a task in allocated time (*M*=4.34, *SD*=0.74) was

self-assessed at 86.49%, and the ability to not wait until the last minute to complete the planned tasks (*M*=4.23, *SD*=0.86) had 80.75% of the faculty agreeing or strongly agreeing. Eighty-two percent of the faculty were not hesitant to use technology in daily tasks (*M*=4.30, *SD*=0.88) (see Table A4 in Appendix H).

Faculty attitudes in the belief that learning can occur in online learning environments as well as in face-to-face settings (*M*=4.42, *SD*=0.76), belief in the appropriateness of the course content for online education (*M*=4.42, *SD*=0.73), belief in the effectiveness of using technology for student learning (*M*=4.37, *SD*=0.78), and belief in the sufficiency of content included in the online education programs (*M*=4.35, *SD*=0.77) as it regards the importance to online instruction averaged 87.54% of those who agree and strongly agree. In contrast, the same four questionnaire items were reviewed from the faculty's perceived self-assessment and averaged 77.48% between agreeing and strongly agreeing with their importance (see Appendix K). These results reflected the faculty's beliefs that using technology and being effective in time management skills is both important to online instruction and as a personal skill under their self-assessment.

Comparison of Full-Time Faculty and Adjunct Faculty

The data in Table A5 and Table A6 (see Appendix H) shows the t-values calculated for the full-time faculty (*N*=159) and adjunct faculty (*N*=58) responses with a $p<.05$. The t-value indicated the probability that both populations have the same mean; the smaller the t-value, the larger the probability of the means to be the same. In contrast, the larger the t-value, the larger is the probability of the means to be different. Three questionnaire statements were identified as important to online instruction between the two sample populations. The results indicated a statistically significant difference between full-time faculty (*M*=4.03, *SD*=0.76) and adjunct faculty (*M*=4.64, *SD*=0.62; $t(187)=3.03$, $p=0.001$) in the belief in the appropriateness of the

course content for online education. The belief in the idea that technology makes life easier also indicated a significant difference between full-time faculty (M=3.75, SD=0.93) and adjunct faculty (M=4.04, SD=0.80; t(192)=2.20, p=0.03). Lastly, a significant difference was identified between full-time faculty (M=4.28, SD=0.79) and adjunct faculty (M=4.52, SD=0.69; t(188)=2.01, p=0.05) in regards to the belief in the sufficiency of content included in the online education programs (see Table A5 in Appendix H).

The results of the paired t-test on the faculty self-assessment revealed only two statements as significantly different between the two groups of faculty. First, the ability to not wait until the last minute to complete the planned tasks reflected a significant difference between the full-time faculty (M=4.13, SD=0.88) and adjunct faculty (M=4.48, SD=0.75; t(187)=2.59, p=0.01). The second item of significant statistical difference was focused on the ability to complete a task in allocated time, with full-time faculty (M=4.27, SD=0.78) reflecting a different attitude than of the adjunct faculty (M=4.52, SD=0.57; t(185)=2.42, p=0.02). A review of these results revealed that the full-time faculty and adjunct faculty perceive to have different attitudes in what is important to online instruction in comparison to their self-assessment (see Appendix M). This information provides professional development coordinators and administrators with insight in how to allocate their resources when working with the two faculty populations.

Significant Similarities and/or Differences between Importance to Online Instruction to Self-Assessment

To test the hypothesis that full-time faculty and adjunct faculty's (N=214) views are equal in their perceptions of comparing importance to online instruction to their self-assessment; a paired samples t-test was performed. There was a significant difference in the scores among nine of the ten attitude questions (see Table A7 in Appendix H). There was no significant

difference in the attitude that the technology makes life easier. Faculty report no significant difference in the importance to online instruction (M=3.85, SD=0.86) and the self-assessment (M=3.94, SD=0.85; t(188)=-1.67, p =0.10). These results suggested that both full-time faculty and adjunct faculty had more similar than dissimilar views as it relates to attitudes in teaching online courses and course development.

Fixed Mindset or Growth Mindset

Full-time faculty and adjunct faculty attitudes, skills, and perceptions of institutional resources towards professional development for online teaching and course development seems to have more of a growth than fixed mindset when reviewing the statistical data. First, ten questions were used to assess the faculty attitudes and had means between 4.66 and 3.06 under both the importance to online education and the self-assessment. Similar results were reflected when using independent samples t-test to compare the means between the two groups of faculty, 4.74 and 2.99. Next, the respondents' answers to what necessary skills are needed for both the importance to online education and the self-assessment were reviewed. Thirty-two of the 52 questions revealed means between 4.70 and 3.16 when reviewing all of the faculty respones. The independent samples t-test revealed means between 4.74 and 3.15 when comparing between the two groups of faculty. The final component, faculty perceptions of institutional resources as it regards professional development were analyzed by using ten out of the 52 questions. The five-point Likert Scale revealed means between 4.81 and 3.02 signaling faculty continued to have more of a growth than fixed mindset. Then, the results of the independent samples t-test, that compared the answers between the two groups of faculty, revealed means between 4.65 and 3.75. As such, faculty overall are open to learning and differences between full-time and adjunct faculty in this sample are minimal.

Research Question Two

What are the skills faculty have for online teaching and course development?

Thirty-two of the 52 questions on the questionnaire were used to measure faculty skills. The questions were determined before distribution. A five-point Likert Scale was used where the respondents (*N*= 214) were asked to respond with a strongly disagree, disagree, neutral, agree, or strongly agree with the statements. An independent samples t-test was used to compare the full-time faculty's and adjunct faculty's average ratings for each question, and a paired sample t-test was used to determine any statistically significant difference between their view of each item based on the importance to online instruction in comparison to their self-assessment (see Table A8 in Appendix H).

Descriptive Statistics

After analyzing the responses from the five-point Likert Scale, Table A8 (see Appendix H) contains a summative report of the results. Eighty-one percent of the total questions (*N*=25) were positively rated as either agree or strongly agree with the statements. For example, the faculty's ability to use the internet effectively (*M*=4.70, *SD*=0.49) was ranked first as the most significant skill, followed by the ability to use computers effectively (*M*=4.69, *SD*=0.50). The least important skill to online instruction was the ability to use nonverbal communication elements (such as emoticons) effectively (*M*=3.16, *SD*= 1.17).

Next, the faculty's self-assessment revealed that 25%, or eight questions, had 80% or more of the faculty either agreeing or strongly agreeing with the statements. In reviewing the responses, the participants ranked the same first and last items as important. The faculty's ability to use the internet effectively (*M*=4.52, *SD*=0.65) was rated the most significant skill, and the ability to use nonverbal communication elements (such as emoticons) effectively (*M*=3.45,

SD=1.20) was rated as the least important skill. This reflected the faculty's diverse perspectives that even though they feel the skill statements are important to online instruction (for example, the different elements of creating, providing, managing, organizing, and preparing aspects of a course), their view did not carry over to their personal skills under their self-assessment (see Table A8 in Appendix H). These results provides professional development coordinators with insight on planning activities for the two different groups of participants. Even though full-time faculty and adjunct faculty teach online courses, each group views the questionnaire statements differently, which impacts their perceived need for professional development courses.

Comparison of Full-Time Faculty and Adjunct Faculty

Table A9 and Table A10 (see Appendix H) display the results of the calculated independent samples t-tests for the full-time faculty's and adjunct faculty's individual responses on the statements as important to online instruction and their self-assessment responses. The analysis of the five-point Likert Scale responses revealed three statements as important to online instruction as significant differences between the two sample populations. The results indicated a significant difference between full-time faculty (*M*=4.03, *SD*=0.84) and adjunct faculty (*M*=4.36, *SD*=0.84; *t*(192)=2.45, *p*=0.02) ability to work collaboratively with the other experts in the course content area. The ability to intervene in the discussions among students at the right time with appropriate approaches also indicated a significant difference between full-time faculty (*M*=4.21, *SD*=0.85) and adjunct faculty (*M*=4.49, *SD*=0.69; *t*(190)=2.20, *p*=0.03). Lastly, a significant difference was identified between full-time faculty (*M*=4.54, *SD*=0.62) and adjunct faculty (*M*=4.71, *SD*=0.56; *t*(198)=1.96, *p*=0.05) in regards to the ability to organize messages concisely and clearly. In each of these the adjunct faculty reported a higher skill level than full-time faculty members.

The results of the independent samples t-test on the faculty self-assessment also revealed five statements as significantly different between the two groups of faculty where the adjunct faculty continued to have a higher mean than the full-time faculty. First, the ability to provide enough feedback when and where needed reflected a noteworthy difference between the full-time faculty (M=4.16, SD=0.80) and adjunct faculty (M=4.48, SD=0.67; t(186)=2.54, p=0.01). Next, the full-time faculty (M=3.44, SD=1.07) and adjunct faculty's (M=3.81, SD=0.97; t(186)=2.15, p=0.03) responses reflected a significant difference with the ability to design and implement online learning activities that promote collaboration among students. Third, the ability to create an online learning environment that promotes social interactions among students was statistically significant difference between the full-time faculty (M=3.39, SD=1.03) and adjunct faculty (M=3.75, SD=1.01; t(187)=2.18, p=0.03). Fourth, the results revealed a statistical difference between full-time faculty (M=3.84, SD=0.93) and adjunct faculty (M=4.15, SD=0.75; t(185)=2.16, p=0.03) on their view of the ability to analyze students' needs and characteristics, and take them into consideration when designing instructional activities. Finally, the ability to see differences and similarities between online teaching and face-to-face teaching was the last significant difference between full-time faculty (M=4.03, SD=0.86) and adjunct faculty (M=4.31, SD=0.79; t(185)=2.06, p=0.04) (see Table A10 in Appendix H). Due to the diversity of responses between the full-time faculty and adjunct faculty, the results provide professional development coordinators with insight on what each group value as important in addition to recognizing areas of additional training.

Significant Similarities and Differences between Full-Time Faculty and Adjunct Faculty

The last statistical test that was conducted on the respondent's responses was a paired t-test (see Table A11 in Appendix H). The test is used to compare the faculty's perspective of the

skills that are important to online instruction in comparison to what they perceive is important through their self-assessment. There is significant difference in the scores among all 32 questionnaire items. This conclusion was reached due to the fact that every item had a $p<0.001$. These results suggest that both full-time faculty and adjunct faculty perceive that all 32 questionnaire statements are important to online instruction and that they possess it as a personal skill in teaching an online course.

Research Question Three

What do faculty perceive as the institutional resources for professional development for online teaching and course development?

Faculty resources were measured by using ten of the 52 questions on the questionnaire that were determined before distribution. The respondents (N= 214) were asked to complete a five-point Likert Scale where descriptive statistics, independent samples t-test, and paired sample t-test were used to analyze the respondents' answers to the different statements in order to determine any statistical significance.

Descriptive Statistics

Faculty's perceptions of needed institutional resources represented ten of the 52 questionnaire items, with four of the items having 90% of the participants agreeing (see Table A12 in Appendix H). Access to internet connectivity and a computer that has enough capacity to be able to implement online teaching at work (M=4.81, SD=0.46) was perceived as the most important institutional resource for online instruction, with 99% of the faculty either agreeing or strongly agreeing. Overall, 95% of the faculty either agree or strongly agree to having access to asynchronous online communication technologies (email, listerv) (M=4.60, SD=0.64). Next, having material support (financial and technological) from the college in order to be able to

design, develop and implement online education (*M*=4.57, *SD*=0.70) gained a 93% consensus in agreement. Finally, 92% of all faculty either agreed or strongly agreed that having enough time to implement online courses is important.

In contrast, only one questionnaire item received 90% agreement among the faculty as either agrees or strongly agree. Having access to asynchronous online communication technologies (email, listserv) (*M*=4.46, *SD*=0.71) was the most important self-assessment for institutional resources. Next, 87% of the faculty reported access internet connectivity and a computer that has enough capacity to be able to implement online teaching at work (*M*=4.40, *SD*=0.81) as the second most important. The results of the questionnaire provides college administrators with data on how to align institutional resources with the consideration of the faculty's perceived best practices in comparison to their self-assessment.

Comparison of Full-Time Faculty and Adjunct Faculty

The data in Table A13 and Table A14 (see Appendix H) shows the t-values calculated for the full-time faculty and adjunct faculty responses with a $p<.05$. The t-value indicated the probability that both populations have the same mean. The research analysis revealed only one statistically significant difference between the full-time faculty and adjunct faculty as it relates to the importance to online instruction and the perception of needed institutional resources. Having access to manuals concerning the implementation of online courses revealed full-time faculty (*M*=3.75, *SD*=1.05) and adjunct faculty (*M*=4.21, *SD*=0.92; *t*(201)=2.89, *p*=0.001) having different perceptions of its importance.

The independent samples t-test results on self-assessment of needed institutional resources were reviewed in order to analyze the differences in faculty perceptions. The self-assessment results concluded that there is no statistically difference in perceptions between the

full-time faculty and adjunct faculty's perceptions as it relates to having access institutional resources (see Table A13 and Table A14 in Appendix H). This information reveals that full-time faculty and adjunct faculty hold similar view regarding access to institutional resources.

Significant Similarities and Differences between Full-Time Faculty and Adjunct Faculty

A paired sample t-test was conducted on the respondent's answers in order to compare the faculty's perception of needed institutional resources between the importance to online instruction and their self-assessment. There is a statistically significant difference between the respondent's importance to online instruction and their self-assessment. All ten resource questionnaire items have a $p<0.001$. These results suggested that both full-time faculty and adjunct faculty perceive the all ten statements are important to both online instructions in addition to having access to the resources on an individual level (see Table A15 in Appendix H).

Research Question Four

Is there a difference in the attitudes, skills, and perceptions of institutional resources by faculty full-time or adjunct status?

An independent samples t-test was used to compare the average ratings for each question on the questionnaire. The respondents (N= 214) were asked to complete a five-point Likert Scale: strongly disagree, disagree, neutral, agree, and strongly agree (see Table A5, Table A6, Table A9, Table A10, Table A13, and Table A14 in Appendix H).

Descriptive Statistics

The questionnaire is composed of 52 questions and divided into three overarching categories: (a) attitudes, represented by ten questions; (b) skills, denoted by 32 questions; and (c) perceptions of institutional resources, presented in ten questions. Both full-time faculty (N=156) and adjunct faculty (N=58) were asked to participate in the study, review the same questions, and to report their perceptions as the questions related to importance to online instructions and self-

assessment. An independent samples t-test was then used to compare and contrast their perceptions in each category. Fourteen of the 52 questions reflected a statistically significant difference between the full-time faculty and adjunct faculty perceptions.

Significant Similarities and Differences between Full-time and Adjunct Faculty

The full-time faculty and adjunct faculty's results reflected five different statements that were statistically significant, with adjunct faculty beliefs rated higher than that of full-time faculty. First, the belief in the appropriateness of the course content for online education was statistically significant [(M_{FT}=4.33, SD_{FT}=0.76); (M_A=4.64, SD_A=0.62); t(187)=3.03, p=0.001]. Next, the belief in the idea that technology makes life easier was reported as the second most important [(M_{FT}=3.75, SD_{FT}=0.93); (M_A=4.04, SD_A=0.80); t(192)=2.20, p=0.03]. Lastly, a significant difference was identified in regards to the belief in the sufficiency of content included in the online education programs [(M_{FT}=4.28, SD_{FT}=0.79); (M_A=4.52, SD_A=0.69); t(188)=2.01, p=0.05]. All three of these questionnaire statements were identified by the faculty as important to online instruction (see Table A5 in Appendix H).

In contrast, the two groups of faculty identified two different statements as being statistically different as the attitude questions related to their self-assessment. First, the ability to not wait until the last minute to complete the planned tasks reflected a significant difference [(M_{FT}=4.13, SD_{FT}=0.88); (M_A=4.48, SD_A=0.75); t(187)=2.59, p=0.01]. The second item of statistical difference is focused on the ability to complete a task in allocated time [(M_{FT}=4.27, SD_{FT}=0.78); (M_A=4.52, SD_A=0.57); t(185)=2.42, p=0.02] (see Table A6 in Appendix H).

The faculty results revealed eight combined skill questions that were statistically significantly different between the full-time faculty and adjunct faculty. Three skill statements regarded the importance to instruction and five questions reflected the faculty's self-assessment.

Importance to instruction included the following questionnaire items. First, the ability to work collaboratively with the other experts in the course content area was reported as most significant difference [(M_{FT}=4.03, SD_{FT}=0.84); (M_A=4.36, SD_A=0.84); t(198)=2.45, p=0.02]. The next reported significant difference was the ability to intervene in the discussions among students at the right time with appropriate approaches [(M_{FT}=4.21, SD_{FT}=0.85); (M_A=4.49, SD_A=0.69); t(190)=2.20, p=0.03]. Lastly, a significant difference was identified between full-time faculty (M=4.54, SD=0.62) and adjunct faculty (M=4.71, SD=0.56; t(198)=1.96, p=0.05) in regards to the ability to organize messages concisely and clearly (see Table A9 in Appendix H).

The faculty's self-assessment regarding the necessary skills for online teaching and course development revealed five statistically different questions out of the 32 statements. First, the ability to provide enough feedback when and where needed reflected a noteworthy difference [(M_{FT}=4.16, SD_{FT}=0.80); (M_A=4.48, SD_A=0.67); t(186)=2.54, p=0.01]. Next, the ability to design and implement online learning activities that promote collaboration among students was significantly different between the two groups [(M_{FT}=3.44, SD_{FT}=1.07); (M_A=3.81, SD_A=0.97); t(186)=2.15, p=0.03]. The faculty responses reflected a difference in the ability to create an online learning environment that promotes social interactions among students [(M_{FT}=3.39, SD_{FT} =1.03); (M_A=3.75, SD_A=1.01); t(187)=2.18, p=0.03]. Fourth, the results revealed a statistical difference between the faculty on their view of the ability to analyze students' needs and characteristics, and take them into consideration when designing instructional activities [(M_{FT}=3.84, SD_{FT}=0.93); (M_A=4.15, SD_A=0.75); t(185)=2.16, p=0.03]. The fifth and final difference in the faculty perspective regarded the ability to see differences and similarities between online teaching and face-to-face teaching [(M_{FT}=4.03, SD_{FT}=0.86); (M_A=4.31, SD_A=0.79); t(185)=2.06, p=0.04] (see Table A10 in Appendix H).

The last independent samples t-test analysis was conducted on the full-time faculty and adjunct faculty's perceptions of needed institutional resources as it relates to the importance to online instruction and their self-assessments. Only one statement, regarding their view on the importance to online instruction, revealed having a significant statistical difference. Having access to manuals concerning the implementation of online courses was significantly different between full-time faculty (M=3.75, SD=1.05) and adjunct faculty (M=4.21, SD=0.92); $t(201)=2.89$, $p=0.001$ (see Table A13 in Appendix H).

A review of these results revealed that the full-time faculty and adjunct faculty perceive to have different perceptions of the attitudes, skills, and institutional resources needed to conduct online teaching and course development. Adjunct faculty rated higher along each of these domains. Having this data enables professional development coordinators and college administration to effectively allocate resources in order to target strengthening faculty's skill sets, providing the needed institutional resources, and as a result, strengthens the college's overall online course offerings.

Analysis of Null Hypotheses

Null Hypothesis One

There is no statistically significant difference in faculty attitudes towards professional development for teaching online and course development.

Full-time faculty and adjunct faculty attitudes towards professional development for teaching online and course development were compared across the three variables of attitudes, skills, and institutional resources. An independent samples t-test was conducted to compare full-time faculty and adjunct faculty beliefs with the following items being the top three results. Faculty responses regarding belief in the idea that technology makes life easier reflected a

significant difference in the beliefs between full-time faculty (*M*=3.75, *SD*=0.93) and adjunct faculty (*M*=4.04, *SD*=0.80; *t*(199)=2.20, *p*=0.03). Next, the faculty responses regarding the belief in the appropriateness of the course content for online education showed a significant difference in their beliefs for full-time faculty (*M*=4.33, *SD*=0.76) and adjunct faculty (*M*=4.64, *SD*=0.62; *t*(194)=3.03, *p*=0.001). Finally an independent sample t-test was conducted to compare full-time faculty and adjunct faculty beliefs in the sufficiency of content included in the online education programs. There was a statistically significant difference in the beliefs of full-time faculty (*M*=4.28, *SD*=0.79) and adjunct faculty (*M*=4.52, *SD*=0.69; *t*(194)=2.01, *p*=0.05) (see Table A4 in Appendix H).

The questionnaire also asked respondents to self-assess their personal attitudes. An independent samples t-test was conducted to compare full-time faculty and adjunct faculty ability to not wait until the last minute to complete the planned tasks. There was a significant difference in their beliefs for full-time faculty (*M*=4.13, *SD*=0.88) and adjunct faculty (*M*=4.48, *SD*=0.75; *t*(187)=2.59, *p*=0.01). The ability to complete a task in allocated time also reflected a significant difference in their beliefs for full-time faculty (*M*=4.27, *SD*=0.78) and adjunct faculty (*M*=4.52, *SD*=0.57; *t*(185)=2.42, *p*=0.02). Given the number of statistically significant findings, the null hypothesis of no difference in faculty attitudes towards professional development for teaching online and course development is rejected (see Table A4 in Appendix H).

Null Hypothesis Two

There is no statistically significant difference in faculty skills for online teaching and course development.

The respondents were asked 32 questions relating to faculty skills. Of the 32 questions, three questionnaire items ranked statistically different between full-time faculty and adjunct faculty as it relates to the importance of online instructions. An independent samples t-test was

conducted to compare the respondent's answers. The ability to work collaboratively with the other experts in the course content area reflected a significant difference in the beliefs of full-time faculty (M=4.03, SD=0.84) and adjunct faculty (M=4.36, SD=0.84; t(190)=2.45, p=0.02). Second, the ability to intervene in the discussions among students at the right time with appropriate approaches was also significant in their belief for full-time faculty (M=4.21, SD=0.85) and adjunct faculty (M=4.49, SD=0.69; t(188)=2.20, p=0.03). Finally, there was a significant difference in their beliefs for full-time faculty (M=4.54, SD=0.62) and adjunct faculty (M=4.71, SD=0.56; t(198)=1.96, p=0.05) in the ability to organize messages concisely and clearly (see Table A9 in Appendix H).

The questionnaire asked faculty to conduct a self-assessment on the same questions. In contrast to the importance of online instruction, five items were determined as significant. The independent samples t-test results revealed the following five items being ranked as significantly different. First, differences in the faculty's ability to provide enough feedback when and where needed was statistically significant [(M_{FT}=4.16, SD_{FT}=0.80); (M_A=4.48, SD_A=0.67); t(184)=2.54, p=0.01]. Next, full-time faculty and adjunct faculty's ability to create an online learning environment that promotes social interactions among students was the second most important. There was a significant difference [(M_{FT}=3.39, SD_{FT}=1.03); (M_A=3.75, SD_A=1.00); t(185)=2.18, p=0.03]. Third was the faculty's ability to analyze students' needs and characteristics, and take them into consideration when designing instructional activities. There were statistically significant differences in faculty beliefs here as well [(M_{FT}=3.84, SD_{FT}=0.93); (M_A=4.15, SD_A=7.51); t(183)=2.16, p=0.03]. Fourth, there was a significant difference in the belief of full-time faculty (M=3.44, SD=1.07) and adjunct faculty (M=3.81, SD=0.97; t(184)=2.15, p=0.03) regarding the ability to design and implement online learning activities that promote

collaboration among students. The final difference regarded the full-time faculty (*M*=4.03, *SD*=0.86) and adjunct faculty's (*M*=4.31, *SD*=0.79; *t*(185) = 2.06, *p* = 0.04) ability to see differences and similarities between online teaching and face-to-face teaching (see Table A10 in Appendix H). The null hypothesis that there is no difference in faculty skills for online teaching and course development is rejected.

Null Hypothesis Three

There is no statistically significant difference in faculty perceptions in the availability of institutional resources for online teaching and course development.

An independent samples t-test was conducted to compare full-time faculty and adjunct faculty perceptions of needed institutional resources at it related to the importance to online instruction and their self-assessment. Only one of the ten questionnaire items, between the two categories, revealed a significant difference between the faculty. Having access to manuals concerning the implementation of online resources registers as the most the most significant difference in their belief's for full-time faculty (*M*=3.75, *SD*=1.05) and adjunct faculty (*M*=4.21, *SD*=0.92; *t*(199)=2.89, *p*=0.001). The other nine questions reflected no statistical difference between the full-time faculty and adjunct faculty and included the topics such as access to the internet, synchronous communication, time to design and develop online material, and having support with materials, moral support, and content expert support (see Table A14 and Table A15 in Appendix H). The null hypothesis of no difference in faculty perceptions in the availability of institutional resources for online teaching and course development is rejected, with the exception of the manual access domain.

Null Hypothesis Four

There is no statistically significant difference between faculty full-time and adjunct faculty in attitudes, skills, and perceptions of institutional resources.

The 52 questions were analyzed with an independent samples t-test in order to learn whether full-time faculty and adjunct faculty share the similar attitudes, skills, and perception of institutional resources as it relates to online instruction and their self-assessment. Fourteen questionnaire items ranked statistically different. The importance to online instruction revealed seven differences between the faculty along the three different competencies. First, the attitudes competency revealed three questionnaire statements as important to instruction. They include the belief in the appropriateness of the course content for online education was statistically significant [(M_{FT}=4.33, SD_{FT}=0.76); (M_A=4.64, SD_A=0.62); t(187)=3.03, p=0.001]. Next, the belief in the idea that technology makes life easier was reported as the second most important [(M_{FT}=3.75, SD_{FT}=0.93); (M_A=4.04, SD_A=0.80); t(192)=2.20, p=0.03]. Lastly, a significant difference was identified in regards to the belief in the sufficiency of content included in the online education programs [(M_{FT}=4.28, SD_{FT}=0.79); (M_A=4.52, SD_A=0.69); t(188)=2.01, p=0.05] (see Table A5 in Appendix H).

Then, three skills competency statements regarding the importance to online instruction had statically significance. The ability to work collaboratively with the other experts in the course content area was reported as most significant difference [(M_{FT}=4.03, SD_{FT}=0.84); (M_A=4.36, SD_A=0.84); t(198)=2.45, p=0.02]. The next reported significant difference was the ability to intervene in the discussions among students at the right time with appropriate approaches [(M_{FT}=4.21, SD_{FT}=0.85); (M_A=4.49, SD_A=0.69); t(190)=2.20, p=0.03]. Lastly, a significant difference was identified between full-time faculty (M=4.54, SD=0.62) and adjunct faculty (M=4.71, SD=0.56; t(198)=1.96, p=0.05) in regards to the ability to organize messages concisely and clearly (see Table A9 in Appendix H).

Finally, the independent samples t-test analysis that was conducted on the faculty's perceptions of needed institutional resources as it relates to the importance to online instruction had only one statement of statically importance. Full-time faculty (M=3.75, SD=1.05) and adjunct faculty (M=4.21, SD=0.92; t(201)=2.89, p=0.001) revealed having access to manuals concerning the implementation of online courses was significantly different between the groups (see Table A13 and A14 in Appendix H).

The faculty's self-assessment along the three competencies also revealed seven statements that were statistically different. First, the ability to not wait until the last minute to complete the planned tasks reflected a significant difference [(M_{FT}=4.13, SD_{FT}=0.88); (M_A=4.48, SD_A=0.75); t(187)=2.59, p=0.01] along with the ability to complete a task in allocated time [(M_{FT}=4.27, SD_{FT}=0.78); (M_A=4.52, SD_A=0.57); t(185)=2.42, p=0.02] (see Table A6 in Appendix H).

Next, the full-time faculty and adjunct faculty results revealed five skills questions as statistically significant with no statistical significant differences for the perceptions of institutional resources being present. First, the ability to provide enough feedback when and where needed reflected a noteworthy difference [(M_{FT}=4.16, SD_{FT}=0.80); (M_A=4.48, SD_A=0.67); t(186)=2.54, p=0.01]. Next, the ability to design and implement online learning activities that promote collaboration among students was significantly different between the two groups [(M_{FT}=3.44, SD_{FT}=1.07); (M_A=3.81, SD_A=0.97); t(186)=2.15, p=0.03]. The faculty responses reflected a difference in the ability to create an online learning environment that promotes social interactions among students [(M_{FT}=3.39, SD_{FT} =1.03); (M_A=3.75, SD_A=1.01); t(187)=2.18, p=0.03]. Fourth, the results revealed a statistical difference between the faculty on their view of the ability to analyze students' needs and characteristics, and take them into consideration when

designing instructional activities [(M_{FT}=3.84, SD_{FT}=0.93); (M_A=4.15, SD_A=0.75); t(185)=2.16, p=0.03]. The fifth and final difference in the faculty perspective regarded the ability to see differences and similarities between online teaching and face-to-face teaching [(M_{FT}=4.03, SD_{FT}=0.86); (M_A=4.31, SD_A=0.79); t(185)=2.06, p=0.04] (see Table A10 in Appendix H). The null hypothesis of no significant difference between faculty full-time and adjunct faculty in attitudes, skills, and perceptions of institutional resources is rejected.

Conclusion

The research results revealed that the full-time faculty (N=105) and adjunct faculty (N=58) have different perceptions of the attitudes, skills, and institutional resources needed to conduct online teaching and course development. The five-point Likert Scale recorded adjunct faculty's answers to have higher results along each of these domains. Further research is suggested in order to collect additional data and learn whether selection bias had occurred within the adjunct faculty participants who elected to participate in the research study. As college administrators continue to gain an understanding of the similarities and differences between their full-time faculty and adjunct faculty's perceptions of institutional support, it is expected that the colleges will improve in providing and allocating the institutional resources to strengthen both their online course offerings and the faculty's base of knowledge.

CHAPTER FIVE: STUDY CONCLUSION

This chapter concludes the research by providing a summary of the study and discussing three major findings both within the context of the research literature on faculty PD and the conceptual framework of adult learning theory. Knowles (1990) and Dweck (2006) provided the adult learning theory framework and Taylor and McQuigan (2008) and Brooks (2010) research framed the barriers and supports in providing PD opportunities to community college faculty. Discussion, implications, and recommendations for the community colleges, campus administration, the profession, and researchers are presented.

Study Summary

This study is an analysis of full-time faculty and adjunct faculty members' attitudes, skills, and institutional resources towards PD opportunities as they relate to online teaching and course development. The need for the study arises out of the identification of three issues that are present in today's academic institutions. These include the continually changing academic environment, maintaining regional accreditation, and new technological developments. As a result, both college administrations and faculty members are in search of PD opportunities that are both feasible to offer and at the same time meet the needs of the faculty. To gain a better sense of the PD needs and interests for full-time faculty and adjunct faculty, I distributed a questionnaire to 2,332 faculty who work within the NCCCS. Data were collected through the use of Dr. Aydin's *Online Teaching Roles, Competencies and Resources Questionnaire* (OTRCRQ) instrument that was distributed electronically. Participants in the research study represented a composition of 214 individuals from 23 different colleges. In reviewing the data, a vector analysis was created for each section of the questionnaire (i.e., attitudes, skills, and institutional resources). First, using the independent samples t-test provided the ability to compare similarities, or differences, in the responses from the two groups. Next, the paired sample t-test

results enabled the data to be evaluated in relationship between the two categorical variables. By analyzing the findings through Taylor and McQuigan (2008) and Brooks (2010) framework on the barriers and supports in providing PD to faculty, the participant's results found that overall full-time faculty and adjunct faculty hold similar views on 19%, or 10 of the 52 questions. As a result, when developing and offering different PD opportunities to full-time faculty and adjunct faculty, administrators should consider the different needs of the two different faculty populations. The following sections contain a more detailed discussion and analysis of my results.

The results of the research identified full-time faculty and adjunct faculty to be internally motivated and self-directed in their learning as addressed in Knowles research (1990; see also: Lawler, 2003; Taylor & McQuiggan, 2008; Wallin & Smith, 2005). The analysis of the participants' responses revealed that full-time faculty and adjunct faculty chose to participate in web-based training as their first choice in preferred delivery method of PD courses and self-paced training concerning online instruction utilizing computer media as their second preferred method of delivery. Next, faculty revealed that they are internally motivated due to participating between 0 and 120 hours for full-time faculty and zero to 80 hours for adjunct faculty because the hours are not reflection SACS-COC requirements. Instead, SACS-COS has not established a minimum numbers of required PD hours by faculty who teach online. They only require academic institutions to provide ongoing professional development opportunities for faculty (SACS-COC, 2012) along with "faculty who teach in distance and correspondence education programs and courses receive appropriate training" (SACS-COC, 2010, p. 3).

The analysis of these responses also leads into Dwerk's theory on an individual's fixed or growth mindset (2012). The results of the research from all three constructs, attitudes, skills, and

perceptions of institutional resources, show faculty to have a growth mindset where they are open to stretching their selves in developing new skills (2006) by seeking out understanding through continually participating in different learning opportunities and by being internally motivated. As a result, both full-time faculty and adjunct faculty are receptive to new information and training opportunities. However, differences arise according to what full-time faculty perceive to be important in contrast to adjunct faculty across the three constructs as it related to the importance to online instruction and their self-assessment. In conclusion, even though the results indicated full-time faculty and adjunct faculty to be active learners and self-motivated, coordination with college administration is still an important element in planning PD opportunities in order to efficiently use college resources.

Significance of Findings

Finding One: Faculty Mindset and Preferred PD Modalities

The descriptive statistics revealed that both full-time faculty and adjunct faculty believe they would benefit and participate in some form of PD training opportunity that is related to online learning. This growth mindset in attitudes along with skills and having access to institutional resources provides each campus and the NCCCS with an employee population that is committed to continually learning in order to provide quality courses to their online students. For example, faculty were asked about the importance of having the skills to use both the internet and computers effectively along with designing online activities. Then under the availability of institutional resources, faculty were asked to respond to questions that related to accessibility in having the moral support from the college in order to be able to design, develop and implement online education. These activities were not present 30 years ago and provide examples of how the educational field is continually changing whereby faculty are willing to

adapt to ongoing changes in their profession both at their academic institutions and in their area of specialty along all three constructs.

As a result, in planning different PD opportunities for full-time faculty and adjunct faculty, web-based, self-paced, and classroom training were ranked as the top three preferences and in that order. By learning the faculty's preferred learning modality, professional development organizers can develop their course delivery to maximize the reach of faculty. Since 1999, the NCCCS has created multiple PD resources that are available to all system employees. They include the Tech-Prep Education program, the Curriculum Improvement Project (CIP), and Career and Technical Education programs, along with the Virtual Learning Community (VLC) and the North Carolina Network for Excellence in Teaching (NC-NET). Out of the five programs, the VLC and NC-NET were included as part of the questionnaire's descriptive questions. The respondents reported either disagreeing or strongly disagreeing using the VLC resources at 49.07% and using the NC-NET resources at 49.53%. Additionally, 21.50% were neutral regarding the VLC, and 25.64% were neutral in using the NC-NET content. I found these results to be unexpected due to the fact that they have both been in operation for over 10 years, are free to use, and offer courses in face-to-face settings, online, and as self-paced modules which corresponds to the faculty's top three modality preferences. These findings suggest that more research is needed in order to learn why these state sponsored PD resources are under-utilized.

Finding Two: Planning Professional Development – Importance verse Self-Assessment

As college campuses balance outside influences and the documentation of their faculty's ongoing PD activities in order to meet the accreditation requirements set forth by SACS-COC, gaining an understanding of the attitudes, skills, and institutional resources from full-time faculty

and adjunct faculty provides administration with insight on developing and offering different PD activities to their employees. Similarities occurred with communication, online education, and content being significant when faculty were asked about needed skills regarding online instruction. In contrast, the faculty's self-assessment revealed that online education was the primary similarity between the groups. The final measure, institutional resources, revealed one similarity in importance to online instruction and no similarities when reviewing the self-assessment results.

The large variance in the remaining nine responses indicates the diverse skill sets and needs of the full-time faculty and adjunct faculty. As a result, colleges should be inclusive when they are discussing PD opportunities as it relates to online teaching and course development due to their faculty's diversified backgrounds. By actively recognizing the diversity of the faculty's attitudes, skills, and institutional resources, alliances among administration, faculty, and the accrediting bodies can be formed (Greenberg, 2012) in order to offer the PD opportunities while efficiently using colleges resources. Also, the programs have the potential to reduce "stagnation and burnout" (Murry, 2002, p. 51) by offering a variety of different programs whereby individuals have the opportunities to learn new items that can be incorporated into the online courses.

Implications

Study implications can be defined as the outcomes of the results. Based on the results of this study, implications are suggested for the colleges and for full-time faculty and adjunct faculty. A detailed explanation of the different implications follows.

Implications for the Profession

Lack of continual education of the faculty. Two implications of offering a limited number of PD courses and in non-preferred delivery methods is the creation of a culture of stagnant faculty members. The college classroom is continually changing due to serving a diverse student population in addition to the continued advancement of technological recourses that are available for use in traditionally seated classes, hybrid classes, and online classes. Without the support of the college's administration by permitting faculty to have a variety of incentives from approving time off, compensation, recognition, and being part of the planning process (Taylor &McQuiggen, 2008), the college is affecting the full-time faculty and adjunct faculty's overall ability to improve instruction. By supporting the faculty's individual efforts to seek self-improvement, their efforts strengthen the integrity of the overall institution.

With faculty teaching a mixture of class formats in one semester, it creates a scheduling issue for offering PD opportunities to a college's faculty. By neither offering nor publicizing different modalities of PD courses, the administration may be encumbering the faculty's personal motivation and indirectly stifling the faculty's growth mindset. At the same time, SACS-COC requires academic institutions to provide ongoing PD of their faculty, and the faculty who teach distance classes are to have the appropriate training. The accrediting policies also hold the faculty accountable for documenting continued PD. Unfortunately if there is not a working relationship between administration and the faculty, miscommunication and frustration can arise due to the non-coordination of PD activities. This seems especially the case regarding adjunct faculty, although future research is needed for further distillation.

Deficiency in trained faculty. Full-time faculty traditionally are not trained with an educational background, pedagogy, or andragogy. Additionally, the adjunct faculty comprises

66.5% of all community college instructors (Phillippe & Sullivan, 2005) and have neither been traditionally trained with an educational background nor do they follow best practices in teaching (Betts & Sikorski, 2008; Green, 2007; Wallen, 2004) by being formally trained instructors. Two potential outcomes of not offering timely and relevant PD opportunities to these two groups of employees include: (a) the perpetuation of the uninformed faculty who continue to teach and are unaware of the best practices in pedagogy and (b) the non-integration of new technological tools that can be incorporated into their courses.

The regional accrediting agencies and faculty. The research revealed that the majority of full-time faculty and adjunct faculty reported participating in 0 to 0.5 hours of PD training. These hours reflected the faculty's personal choice in the amount of PD participation because they are meeting the SACS-COC standards due to the agency does not require a specific number of PD hours. The question arises if the 0.5 hours of PD training over a 12 month time period ensures the quality of delivery of online education by the faculty or not. If not, should the regional accrediting agencies provide more defined guidelines in the minimum number of required hours along with in what subject matter/s? From this study it is apparent that the mandate as it currently stands effects increased PD participation only on the margins.

Implications for Colleges

Lack of forward planning by the administration. College administrators are tasked with managing institutional resources for hiring faculty to teach the diversified course offerings to their enrolled students. Administrators who do not support the continued education of both their full-time faculty and adjunct faculty are by default hindering the quality of education that is occurring within the classroom. First, it is only through the faculty that academic institutions are able to maintain and even exceed their academic reputations. Second, the faculty are the face of

the institution due to the fact that they are the ones who are in daily contact with the students. For this reason faculty function in student retention and completion efforts, knowingly or not. Student academic and social integration in community colleges occurs mostly in the classroom (Tinto, 1997). As such it is in the interest of the administration in meeting other accountability goals to make sure faculty are engaging in PD, improving their skills and in turn improve their ability to reach students and keep them engaged in the education process.

Forward planning by the administration. In contrast, college administrators who engage their faculty in creating PD opportunities that are timely, relevant, and convenient for their faculty are both creating a positive academic culture while also meeting the regional accrediting agency's guidelines. This research revealed that overall, faculty are open to learning and differences between full-time and adjunct faculty in this sample are minimal. As a result, perceived barriers between the two groups, faculty and administration, have the ability to be removed with open lines of communication and working together to meet the common goal of extending PD opportunities that the faculty feel are relevant to their continued growth.

Lack of using state sponsored professional development resources. With the NCCCS providing faculty with multiple sources for PD opportunity that include the Tech-Prep Education program, the Curriculum Improvement Project (CIP), the Career and Technical Education program, the Virtual Learning Community (VLC), and the North Carolina Network for Excellence in Teaching (NC-NET), a question arises regarding the amount of knowledge the faculty have about these programs and if the organizations are gathering input from their end users, the faculty, on what topics they perceive to import for their personal skill growth. With approximately 70% of the participants being neutral, disagreeing, or strongly disagreeing with the use of the two surveyed times, the VLC and NC-NET, the questions arise as to why. Upon

further examination, if these PD resources have low participation rates, the question arises if both the monetary and personnel resources should be transferred to the individual colleges and/or departments where the efforts can be maximized increase the use of the targeted audience, full-time faculty and adjunct faculty.

Recommendations

Based on the results of this study, recommendations are suggested for the NCCCS college's administration. Additionally, recommendations for areas of future research are provided.

Recommendation for Colleges

Colleges have allocated state and federal resources to create multiple PD avenues for both full-time and adjunct faculty. As part of the process, participants are required to register for each course. A recommendation would be creating a procedure that provides the 58 community colleges with a list of participants and the completed course; for example the creation of PD transcript. This would provide several benefits. First, the participant list would document individual's PD activities. Next, it would provide formal documentation for accrediting agencies to document the ongoing training of the college's full-time and adjunct faculty. Finally, it would assist the faculty's documentation in case they either forget to report it to administration or misplace the course information.

Recommendations for Administration

The questionnaire revealed diversity in the skill set among both the full-time and adjunct faculty. In order to maximize institutional fiscal and human recourses, an active approach to gain input from faculty would aid in the development and targeting of their specific needs and interests. This could be accomplished through either creating informal surveys or of a formalized

PD program where faculty are part of the planning and implementation process. In addition, it would behoove NCCCS to directly inquire into current PD efforts and the effectiveness of present activities

Recommendations for Research

The analysis and review of the researched creates several proposed additional areas of research for future studies. First, replicating this research within another community college system would allow an analysis of results generalizability across system lines. In addition, an analysis of 4-year institutions has the potential to reveal whether there are similarities or differences between the full-time faculty and adjunct faculty's attitudes, skills, and institutional resources with their colleagues who work at 2-year academic institutions. Analysis of the results would provide insight on how to maximize PD resources that supports the faculty in their ongoing continued education.

Another area of research could examine whether there is a difference in the quality of instruction between full-time faculty and adjunct faculty. The execution of this research would provide insight of how PD training may or may not directly convert into quality education in the delivery of course material. Two research questions are suggested: (1) What are the attitudes of faculty towards quality course instruction for face-to-face, blended, and distance education instruction? (2) Do the perceived required skills between full-time faculty and adjunct faculty differ as it pertains to delivering quality instruction? For example, the outcomes of these questions could provide academic institutions with increased awareness of their adjunct faculty and as a result, create campus activities that are both flexible and inclusive so that they are incorporated into the institution's operations and thus reduce the range of teaching backgrounds between the full-time faculty and adjunct faculty. For example, this research revealed the when

the full-time faculty and adjunct faculty's answers were compared; all but one question was identified as important between the groups. Would other college's receive similar results if the same instrument was distributed on their campuses?

Third, future research could investigate the quality of course development for face-to-face teaching, hybrid/blended course delivery, and distance learning due to today's full-time faculty and adjunct faculty work with different learning management systems. Three research questions are suggested: (1) As faculty, are you provided the resources to develop and deliver quality educational course? (2) What institutional resources and support should be provided to both full-time and adjunct faculty? (3) How does the instructor's expertise of the learning management system correlate to providing a quality online course? Each of these future areas of research has the ability to reveal institutional deficiencies and highlight where more resources and support can be assigned to strengthen the overall academic institution.

Finally, this research focused on full-time faculty and adjunct faculty who teach online classes, work within the NCCCS, which is part of the SACS-COC regional accrediting agency. With this narrow of a focus, one question for further inquiry arises if there would be similar results if the study was replicated in a different community college system which is accredited by a different regional accrediting body. The results would provide insight on how different college's offer and provide PD opportunities to their faculty along with the perceptions of those offerings by their full-time and adjunct faculty.

Conclusion

In this study I examined full-time faculty and adjunct faculty members' attitudes, skills, and institutional resources towards PD opportunities as they relate to online teaching and course development. After analyzing the respondent's responses, I find that the faculty's perceptions of

importance to online instruction differed from their self-assessment along the three constructs of attitudes, skills, and institutional resources. In analyzing the results within Knowles' (1990) adult learning theory framework, I conclude that creating and scheduling PD opportunities for faculty must consider if they are full-time faculty or adjunct faculty, the required skills to deliver quality online courses, and speaking to the faculty about their perceived needs in order to keep both full-time faculty and adjunct faculty engaged and current in the field.

Next, I examined whether faculty have a growth or fixed mind-set as framed by Dwerk's (2012) research. The attitude, skill, and institutional resource statements revealed that full-time faculty and adjunct faculty are perceived to have a growth mindset which identifies faculty to have a learning perspective where they are continually seeking out different learning environments. This aids PD coordinators and college administrators in overcoming different barriers and instead develops content that is delivered in the faculty's preferred delivery method.

Third, the alliance between full-time faculty, adjunct faculty, and administration in offering and participating in PD activities related to online education, creates an academic environment where they are fostering an atmosphere of ongoing education for the faculty to remain up-to-date in the best practices of instruction in addition to meeting the regional accrediting agency's standards. Under this voluntarily self-regulation among the eight regional accrediting agencies, standards have been created for the academic institutions. Yet, each institution has the flexibility in how they meet those standards. As a result, decisions can be made quickly by each college's administration, full-time faculty, and adjunct faculty in order to determine what PD opportunities are appropriate for their institutions. This operational format subscribes to the systems theory and management where individual parts are combined to accomplish an objective or end goal (Johnson, Kast, & Rosenzweig, 1964) and at the same time

meet Greensberg's (2012) concern that the current voluntary accreditation system is under threat. As long as each stakeholder meets their agreed to responsibilities, the current accrediting system is able to institute a set of standards that ensures the colleges are offering quality instruction to their students.

As a result of the findings, it is important to develop a comprehensive research-based PD for all full-time and adjunct faculty. Creating a campus PD program that incorporates the results of this research would foster a dynamic environment between all stake holders. First an open dialogue between the faculty and the PD office would create a relationship where timely and relevant programs are offered in the delivery method that would reach the most faculty. Second, continually offering different PD courses and recording faculty attendance meets the different accrediting organization's guidelines. And finally, the overall institution benefits by having full-time and adjunct faculty who are up to date in their disciplines, online instruction, and course content which translates into their students receiving a quality education as prescribed by the regional accrediting agencies.

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APPENDIX A: QUESTIONNAIRE INSTRUMENT

Survey Instrument

Survey Number _____

Department _____

Years of online instructional experience _____

Number of hours of professional development training obtained concerning online learning _____

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I believe there is a need or additional professional training opportunities related to online learning					
I would benefit from professional development training concerning online learning					
I would participate in some form of professional development training related to online learning					
I would participate in classroom training concerning online learning					
I would participate in web-based training concerning online learning					
I would participate in self-paced professional development training concerning online instruction utilizing computer media					
I would participate in mentored learning groups focused on online instruction					
I would participate in formal courses offering college course credit					
I would participate in guided self-studies focusing on online instruction					
I use the resources offered by the VLC					
I use the resources offered by NC-NET					

Importance to Online Instruction						Self-Assessment				
Very Low	Low	Moderate	High	Very High	Question	Very Low	Low	Moderate	High	Very High
					Have access to manuals concerning the implementation of online courses	Resources				
					Access to Internet connectivity and a computer that has enough capacity to be able to implement online teaching at work	Resources				
					Ability to use computers effectively	Skills				
					Ability to use Internet effectively	Skills				
					Ability to create and publish multimedia	Skills				
					Ability to use the online learning management system chosen by the institution and compare it with other systems	Skills				
					Ability to provide support for students who are having technical problems	Skills				
					Ability to follow developments in online teaching technologies and adopt new technologies into the courses	Skills				
					Not hesitant to use technology in daily tasks	Attitudes				
					Belief in the idea that technology makes life easier	Attitudes				
					Have access to synchronous online communication technologies (chat, video conference)	Resources				
					Have access to asynchronous online communication technologies (email, listserv)	Resources				
					Ability to express ideas, thoughts, and feelings in written form	Skills				
					Ability to organize messages concisely and clearly	Skills				
					Ability to use nonverbal communication elements (such as emoticons) effectively	Skills				
					Ability to motivate and encourage students to complete planned activities	Skills				
					Prefer to use informal language during interactions with students	Attitudes				
					Prefer use of email to send a message while other communication tools such as phone are also available	Attitudes				
					Have enough time to design and develop	Resources				

					instructional materials for online courses					
					Have enough time to implement online courses	Resources				
					Ability to leave enough time for instructional activities	Skills				
					Ability to complete planned activities in allocated time	Skills				
					Ability to manage time effectively	Skills				
					Ability to not wait until the last minute to complete the planned tasks	Attitudes				
					Ability to complete a task in allocated time	Attitudes				
					Have material support (financial and technological) from the college in order to be able to design, develop and implement online education	Resources				
					Moral support (encouragement or motivation) from the college in order to be able to design, develop and implement online education	Resources				
					Ability to design and implement online learning activities that promote collaboration among students	Skills				
					Ability to create an online learning environment that promotes social interactions among students	Skills				
					Ability to see differences and similarities between online teaching and face-to-face teaching	Skills				
					Ability to decide whether or not online teaching is appropriate	Skills				
					Ability to design interesting and appealing online learning activities (instructional games, puzzles, questions) that facilitate achievement of the instructional goals and support active participation of students	Skills				
					Ability to prepare instructional materials that are easy to read and comprehend	Skills				
					Ability to provide enough feedback when and where needed	Skills				
					Ability to create a democratic environment in which student are able to communicate with each other unreservedly about the course content and feel no discrimination	Skills				
					Ability to present the appropriate online teaching role in encountered situations	Skills				
					Ability to analyze students' needs and characteristics, and take them into consideration when designing instructional activities	Skills				
					Ability to direct students in the use of	Skills				

					different resources (online or other)					
					Ability to keep up with new learning and teaching theories, approaches, and models	Skills				
					Ability to develop and administer appropriate online assessment tools and strategies	Skills				
					Ability to cope with problem students without losing them	Skills				
					Ability to intervene in the discussions among students at the right time with appropriate approaches	Skills				
					Ability to select appropriate instructional activities to the available online technologies	Skills				
					Belief in the effectiveness of using technology for student learning	Attitudes				
					Belief that learning can occur in online learning environments as well as in face-to-face settings	Attitudes				
					Have enough support from other content experts	Resources				
					Have easy access to resources related to content area	Resources				
					Ability to act like an expert during online instruction	Skills				
					Ability to reach and follow up-to-date resources in the course content area	Skills				
					Ability to work collaboratively with the other experts in the course content area	Skills				
					Belief in the sufficiency of content included in the online education programs	Attitudes				
					Belief in the appropriateness of the course content for online education	Attitudes				

APPENDIX B: SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS – COMMISSION ON COLLEGES: PRINCIPLES OF ACCREDITATION - FOUNDATIONS FOR QUALITY ENHANCEMENT

Core Requirements:

2.8 The number of full-time faculty members is adequate to support the mission of the institution and to ensure the quality and integrity of each of its academic programs. Upon application for candidacy, an applicant institution demonstrates that it meets the comprehensive standard for faculty qualifications. (Faculty) (p. 20).

Comprehensive Standards:

3.7.1 The institution employs competent faculty members qualified to accomplish the mission and goals of the institution. When determining acceptable qualifications of its faculty, an institution gives primary consideration to the highest earned degree in the discipline. The institution also considers competence, effectiveness, and capacity, including, as appropriate, undergraduate and graduate degrees, related work experiences in the field, professional licensure and certifications, honors and awards, continuous documented excellence in teaching, or other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes. For all cases, the institution is responsible for justifying and documenting the qualifications of its faculty. (See Commission guidelines "Faculty Credentials.") (Faculty competence)

3.7.3 The institution provides ongoing professional development of faculty as teachers, scholars, and practitioners. (Faculty development)

Federal Requirements:

4.8 An institution that offers distance or correspondence education documents each of the following: (Distance and correspondence education)

APPENDIX C: CORD ELEVEN RECOMMENDATIONS FOR FUTURE PROFESSIONAL DEVELOPMENT IN THE NORTH CAROLINA COMMUNITY COLLEGE SYSTEM

Recommendation #1: Develop a NCCS Professional Development Clearinghouse that allows for and encourages statewide sharing of professional development tools and resources.

Recommendation #2: Establish a state professional development consortium comprised of faculty and administrator representative from across the state to identify, develop, and disseminate strategies for excellence in state-wide professional development.

Recommendation #3: Support Adjunct Faculty

Recommendation #4: Develop Resources for Statewide Sharing

Recommendation #5: Secure additional professional development funding

Recommendation #6: Adopt and advocate a balanced approach to faculty development

Recommendation #7: Recognize the diversity of faculty

Recommendation #8: Capture some of the knowledge of senior faculty through programs that involve mentoring new faculty

Recommendation #9: Provide meaningful professional development to administrators in the areas requested

Recommendation #10: Expand existing Learning Resource Centers to Teaching and Learning

Recommendation #11: Take a closer look at the reasons cited by faculty for non-use of the Virtual Learning Community;

APPENDIX D: NORTH CAROLINA COMMUNITY COLLEGE SYSTEM

VISION FOR DISTANCE EDUCATION

The North Carolina Community College System will assist its colleges in serving students who would otherwise be unserved, expanding learning opportunities, making instruction accessible, and using technology to supplement classroom instruction.

The Virtual Learning Community, supported by Learning Technology Systems, will provide hardware, software, content, and training to administrators and faculty within the North Carolina Community College System for their use in providing their students with Web based courses, telecourses, interactive video courses, and hybrid courses.

APPENDIX E: PARTICIPANT CONSENT

Dear Participant,

I am a doctoral student at East Carolina University in the Higher, Adult, and Counselor Education department. I am asking you to participate in my research study entitled, "North Carolina Community College System and Professional Development of Faculty".

The purpose of this study is to analyze full-time and adjunct faculty members' attitudes, skills, and resources towards professional development opportunities as they relate to online teaching and course development. By completing this research, I hope to learn more about faculty's perceptions of institutional support and the extent of the skills displayed by the NCCCS office (and other entities) when preparing and conducting online professional development courses. Your participation in this study is voluntary.

You are being invited to take part in this research because you fall into the category of full-time faculty or adjunct faculty. The amount of time it will take you to complete this study is approximately 15 minutes.

You are being asked to answer a series of questions in order to measure your perceptions of three competencies (skills, attitudes, and resources) and five factors (technology, communication, time, online education, and content) regarding professional development and its method of delivery. Demographic information will also be collected in order to assist in the data analysis.

Because this research is overseen by the ECU Institutional Review Board, some of its members or staff may need to review my research data. However, the information you provide will not be linked to you in any way. Therefore, the anonymous responses cannot be traced back to you by anyone, including me.

If you have questions about your rights as someone taking part in research, you may call the UMCIRB Office at phone number 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director of UMCIRB Office, at 252-744-1971.

You do not have to take part in this research, and you can stop at any time. If you decide you are willing to take part in this study, continue on with the survey link below.

https://ecu.az1.qualtrics.com/SE/?SID=SV_0kewZJpDCubXsI5

Thank you for taking the time to participate in my research.

Sincerely,

Darcie L. Tumey, Principal Investigator

APPENDIX F: LETTER OF APPROVAL FROM DR. AYDN

TO USE HIS QUESTIONNAIRE

Cengiz Hakan AYDIN <chaydin@anadolu.edu.tr>
Wed 10/16/2013 12:27 PM
Dear Darcie L. Tumey,

Terrible sorry for late respond. Please feel free to use it.

Thanks
C. Hakan AYDIN
Anadolu University, Turkey
REPLYREPLY ALLFORWARD
mark as unread

Darcie Tumey
Sat 10/5/2013 11:52 AM
Sent Items
To:
chaydin@anadolu.edu.tr;

Dear Professor Doctor Aydin:

I am a doctoral student at East Carolina University in Greenville, North Carolina and currently working on the research for my dissertation. Upon conducting my literature review on the professional development preferences of full-time faculty, I located your *Online Teaching Roles, Competencies and Resources Questionnaire*.

I wanted to ask for your permission to use the OTRCRQ instrument in its original or modified form as the foundation in my research. My focus is to survey a sample of the full-time faculty in the North Carolina Community College System regarding their involvement in professional development activities.

Thank you for your consideration and please contact me if I can provide any additional information or assistance.
Sincerely,
Darcie L. Tumey

Darcie L. Tumey, BA, MBA
Instructor of Business Administration
Catawba Valley Community College
2550 Hwy 70 SE
Hickory, North Carolina 28602
828.327.7000 Ext 4011
dtumey@cvcc.edu

APPENDIX G: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
4N-70 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** · www.ecu.edu/irb

Notification of Exempt Certification

From: Social/Behavioral IRB
To: Darcie Turney
CC: Crystal Chambers
Date: 5/9/2014
Re: UMCIRB 14-000727
NCCCS and Professional Development of Faculty

I am pleased to inform you that your research submission has been certified as exempt on 5/9/2014 . This study is eligible for Exempt Certification under category #2 .

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The UMCIRB office will hold your exemption application for a period of five years from the date of this letter. If you wish to continue this protocol beyond this period, you will need to submit an Exemption Certification request at least 30 days before the end of the five year period.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

IRB00003705 East Carolina U IRB #1 (Biomedical) IORG0001418
IRB00003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000818

APPENDIX H: RESEARCH DATA

Table A1

Additional Characteristics of the respondent group

Characteristic		Percentage (n=214)
Fine Arts		
	Arts and Science	7
	Biology	5
	Chemistry+	3
	College Transfer	5
	Communication	3
	Developmental English and Reading	3
	Developmental Math	1
	Early Childhood Education	4
	Education Technologies	4
	English	26
	General Education	1
	Health	2
	History	1
	Human Resources	2
	Humanities and Fine Arts	4
	Humanities and Social Sciences	10
	Mathematics	11
	Psychology	1
	Religion	1
	Science	3
	Social Sciences	8
Business, Industry, and Technology		
	Accounting	3
	Business, Industry, and Technology	32
	Computer Information Technology	9
	Computer-Integrated Machining Technology	1
	Cosmetology	1
	Criminal Justice Technology	7
	Design, Manufacturing, and Industrial Technology	1
	Engineering	1
	Information Technology	2

	Medical Office Administration and Office Administration	1
	Office Systems Technology	2
	Public Safety	2
	Public Services – Cyber Crime Technology	1
	Vocational	2
Health Professions		
	Allied Health	6
	Dental Hygiene	3
	Fire Protection Technology	1
	Health and Human Services	2
	Mammography	1
	Nursing Education	8
	Radiography	1
	Respiratory Therapy	1
Other Professions		
	Adjunct Faculty	1
	Administration	1
	Career and College Readiness	2
	Curriculum	3
	Distance Learning	3
	Full-time Faculty	2
	Institutional Effectiveness	1
	Instructional Administration	1
	Southeastern Community College	1
	Student Services	1
	Student Success	2
	TRiO	1
Continuing Education		
	Continuing Education	2
Faculty Status		
	Full-Time Faculty	156
	Adjunct Faculty	58

Note: Percentages were rounded to the nearest whole number; as a result, some percentages do not total 100.

Table A2

Professional Development Dispositions, All Faculty Perceptions of Need, Levels of Benefits, and Willingness to Participate in Professional Development Training Related to Online Learning

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Means	*S.D.*
I believe there is a need or additional professional training opportunities related to online learning	4	7	14	88	101	4.29	0.87
I would benefit from professional development training concerning online learning	5	4	17	95	93	4.25	0.86
I would participate in some form of professional development training related to online learning	6	0	11	104	93	4.3	0.81
Preferences Related to Preferred Modalities of Professional Development							
Classroom training concerning online learning	10	18	28	89	68	3.88	1.1
Web-based training concerning online learning	4	17	14	90	89	4.14	0.98

Self-paced professional development training concerning online instruction utilizing computer media	8	14	13	94	85	4.09	1.03
Mentored learning groups focused on online instruction	10	31	37	85	50	3.63	1.13
I would participate in formal courses offering college course credit	17	40	40	66	51	3.44	1.26
Guided self-studies focusing on online instruction	7	23	29	92	62	3.84	1.07
Resources offered by the VLC	25	80	46	42	18	2.75	1.16
Resources offered by NC-NET	24	82	57	36	12	2.67	1.07

$^{**}p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A3

Perceptions of Need, Levels of Benefits, and Willingness to Participate in Professional Development Training Related to Online Learning

	Full-Time (N=156) Means (*S.D.*)	Adjunct (N=58) Means (S.D.)	t-test	*p*-value
I believe there is a need or additional professional training opportunities related to online learning	4.28 0.87	4.31 0.88	0.26	0.80
I would benefit from professional development training concerning online learning	4.26 0.86	4.21 0.87	0.42	0.67
I would participate in some form of professional development training related to online learning	4.31 0.79	4.26 0.85	0.93	0.66
Preferences Related to Preferred Modalities of Professional Development				
Classroom training concerning online learning	3.94 1.07	3.72 1.67	1.25	0.21
Web-based training concerning online learning	4.12 1.01	4.17 0.90	0.34	0.74
Self-paced professional development training concerning online instruction utilizing computer media	4.07 1.02	4.16 1.04	0.54	0.59
Mentored learning groups focused on	3.54	3.88	1.99	0.05

online instruction	1.12	1.14		
I would participate in formal courses offering college course credit	3.37 1.28	3.64 1.18	1.41	0.16
Guided self-studies focusing on online instruction	3.81 1.06	3.91 1.09	0.60	0.55
Resources offered by the VLC	2.75 1.17	2.75 1.12	0.01	1.00
Resources offered by NC-NET	2.68 1.06	2.63 1.08	0.30	0.76

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A4

Full-Time Faculty and Adjunct Faculty's Attitudes towards Professional Development in an Online Teaching and Course Development – Importance to Online Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Means	*S.D.*
Ability to complete a task in allocated time	0	1	8	46	138	4.66	0.58
Ability to not wait until the last minute to complete the planned tasks	1	2	7	43	141	4.65	0.65
Not hesitant to use technology in daily tasks	0	1	15	71	109	4.47	0.66
Belief that learning can occur in online learning environments as well as in face-to-face settings	0	5	17	62	107	4.42	0.76
Belief in the appropriateness of the course content for online education	0	2	22	63	107	4.42	0.73
Belief in the effectiveness of using technology for student learning	1	3	20	67	100	4.37	0.78
Belief in the sufficiency of content included in the online education programs	1	2	23	71	97	4.35	0.77
Prefer use of email to send a message while other communication tools such as phone are also available	0	7	50	70	72	4.04	0.87
Belief in the idea that technology makes life easier	3	8	58	81	49	3.83	0.90
Prefer to use informal language during interactions with students	17	42	73	43	22	3.06	1.11

Full-Time Faculty and Adjunct Faculty's Attitudes towards Professional Development in an Online Teaching and Course Development – Self-Assessment

Ability to complete a task in allocated time	0	2	23	70	90	4.34	0.74
Not hesitant to use technology in daily tasks	2	5	26	59	100	4.30	0.88
Belief that learning can occur in online learning environments as well as in face-to-face settings	1	8	24	65	87	4.24	0.88
Ability to not wait until the last minute to complete the planned tasks	2	3	31	65	86	4.23	0.86
Prefer use of email to send a message while other communication tools such as phone are also available	1	5	34	62	90	4.22	0.87
Belief in the effectiveness of using technology for student learning	1	6	30	76	72	4.15	0.84
Belief in the appropriateness of the course content for online education	2	5	37	81	62	4.05	0.86
Belief in the sufficiency of content included in the online education programs	2	8	44	80	54	3.94	0.89
Belief in the idea that technology makes life easier	0	7	55	74	56	3.93	0.06
Prefer to use informal language during interactions with students	18	28	72	46	27	3.19	1.14

$^{**}p < .05$

Table A5

Full-Time Faculty and Adjunct Faculty's Attitudes towards Professional Development in an Online Teaching and Course Development – Importance to Online Instruction

	Full-Time Faculty		Adjunct Faculty			
	M	SD	M	SD	t-test	*p***
Not hesitant to use technology in daily tasks	4.44	0.68	4.55	0.60	1.13	0.26
Belief in the idea that technology makes life easier	3.75	0.93	4.04	0.80	2.20	0.03
Prefer to use informal language during interactions with students	2.99	1.09	3.21	1.16	1.27	0.21
Prefer use of email to send a message while other communication tools such as phone are also available	4.00	0.89	4.14	0.81	1.03	0.30
Ability to not wait until the last minute to complete the planned tasks	4.64	0.64	4.70	0.68	0.65	0.52
Ability to complete a task in allocated time	4.63	0.62	4.74	0.48	1.26	0.21
Belief in the effectiveness of using technology for student learning	4.32	0.80	4.51	0.72	1.56	0.12
Belief that learning can occur in online learning environments as well as in face-to-face settings	4.39	0.78	4.49	0.72	0.83	0.41
Belief in the sufficiency of content included in the online education programs	4.28	0.79	4.52	0.69	2.01	0.05
Belief in the appropriateness of the course content for online education	4.33	0.76	4.64	0.62	3.03	0.00

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A6

Full-Time Faculty and Adjunct Faculty's Attitudes towards Professional Development in an Online Teaching and Course Development – Self-Assessment

	Full-Time Faculty		Adjunct Faculty			
	M	SD	M	SD	t-test	*p***
Not hesitant to use technology in daily tasks	4.26	0.93	4.41	0.71	1.04	0.3
Belief in the idea that technology makes life easier	3.91	0.82	3.98	0.92	0.5	0.62
Prefer to use informal language during interactions with students	3.19	1.13	3.19	1.18	0	1
Prefer use of email to send a message while other communication tools such as phone are also available	4.24	0.82	4.19	0.99	0.39	0.7
Ability to not wait until the last minute to complete the planned tasks	4.13	0.88	4.48	0.75	2.59	0.01
Ability to complete a task in allocated time	4.27	0.78	4.52	0.57	2.42	0.02
Belief in the effectiveness of using technology for student learning	4.11	0.87	4.25	0.76	1.05	0.3
Belief that learning can occur in online learning environments as well as in face-to-face settings	4.21	0.86	4.31	0.92	0.68	0.5
Belief in the sufficiency of content included in the online education programs	3.9	0.86	4.02	0.95	0.8	0.43

Belief in the appropriateness of the course content for online education	4	0.85	4.17	0.87	1.22	0.22

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A7

Comparison between Full-Time and Adjunct Faculty Attitudes towards Professional Development in an Online Teaching and Course Development Using paired samples t-test - Comparing Importance to Online Instruction to Self-Assessment

	Importance to Online Instruction		Self-Assessment			
	M	SD	M	SD	t-test	*p***
Not hesitant to use technology in daily tasks	4.48	0.64	4.32	0.87	2.29	0.02
Belief in the idea that technology makes life easier	3.85	0.86	3.94	0.85	1.67	0.1
Prefer to use informal language during interactions with students	3.05	1.09	3.18	1.16	2.63	0.01
Prefer use of email to send a message while other communication tools such as phone are also available	4.04	0.87	4.23	0.87	3.35	0.001
Ability to not wait until the last minute to complete the planned tasks	4.67	0.62	4.24	0.86	7.84	0.001
Ability to complete a task in allocated time	4.67	0.58	4.36	0.73	6.55	0.001
Belief in the effectiveness of using technology for student learning	4.37	0.78	4.15	0.84	3.89	0.001
Belief that learning can occur in online learning environments as well as in face-to-face settings	4.43	0.75	4.24	0.88	3.94	0.001

Belief in the sufficiency of content included in the online education programs	4.36	0.76	3.95	0.88	6.43	0.001
Belief in the appropriateness of the course content for online education	4.43	0.72	4.06	0.85	6.27	0.001

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A8

Full-Time Faculty and Adjunct Faculty's Skills towards Professional Development in an Online Teaching and Course Development – Importance to Online Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Means	*S.D.*
Ability to use computers effectively	0	0	4	53	142	4.69	0.50
Ability to use Internet effectively	0	0	3	54	141	4.70	0.49
Ability to create and publish multimedia	1	8	42	84	62	4.01	0.86
Ability to use the online learning management system chosen by the institution and compare it with other systems	2	7	23	66	100	4.29	0.88
Ability to provide support for students who are having technical problems	2	9	42	56	90	4.12	0.96
Ability to follow developments in online teaching technologies and adopt new technologies into the courses	1	5	26	79	89	4.25	0.81
Ability to express ideas, thoughts, and feelings in written form	0	1	1	59	128	4.58	0.62
Ability to organize messages concisely and clearly	0	0	12	58	128	4.59	0.60
Ability to use nonverbal communication elements (such as emoticons) effectively	18	36	72	41	31	3.16	1.17
Ability to motivate and encourage students to complete planned activities	1	0	20	75	100	4.39	0.71
Ability to leave enough time for instructional activities	0	2	19	52	123	4.51	0.71

Ability to complete planned activities in allocated time	0	3	12	50	129	4.57	0.68
Ability to manage time effectively	0	1	10	45	139	4.65	0.60
Ability to design and implement online learning activities that promote collaboration among students	1	6	34	78	74	4.13	0.85
Ability to create an online learning environment that promotes social interactions among students	1	5	47	68	72	4.06	0.88
Ability to see differences and similarities between online teaching and face-to-face teaching	0	1	23	70	98	4.38	0.71
Ability to decide whether or not online teaching is appropriate	2	2	26	56	102	4.35	0.84
Ability to design interesting and appealing online learning activities (instructional games, puzzles, questions) that facilitate achievement of the instructional goals and support active participation of students	1	5	29	74	82	4.21	0.83
Ability to prepare instructional materials that are easy to read and comprehend	0	1	9	55	126	4.60	0.61
Ability to provide enough feedback when and where needed	0	0	9	52	129	4.63	0.57

Ability to create a democratic environment in which student are able to communicate with each other unreservedly about the course content and feel no discrimination	1	5	32	59	95	4.26	0.87
Ability to present the appropriate online teaching role in encountered situations	0	2	20	74	93	4.37	0.71
Ability to analyze students' needs and characteristics, and take them into consideration when designing instructional activities	0	1	35	61	93	4.29	0.78
Ability to direct students in the use of different resources (online or other)	0	1	24	62	104	4.41	0.73
Ability to keep up with new learning and teaching theories, approaches, and models	0	4	28	66	93	4.30	0.79
Ability to develop and administer appropriate online assessment tools and strategies	0	2	12	69	108	4.48	0.66
Ability to cope with problem students without losing them	0	2	27	67	94	4.33	0.76
Ability to intervene in the discussions among students at the right time with appropriate approaches	0	4	31	61	94	4.29	0.81
Ability to select appropriate instructional activities to the available online technologies	0	1	13	81	96	4.42	0.64
Ability to act like an expert during online instruction	1	4	32	72	83	4.21	0.83

Ability to reach and follow up-to-date resources in the course content area	0	0	21	74	97	4.40	0.68
Ability to work collaboratively with the other experts in the course content area	0	7	38	71	76	4.13	0.85

Full-Time Faculty and Adjunct Faculty's Skills towards Professional Development in an Online Teaching and Course Development – Self-Assessment

Ability to use computers effectively	0	0	21	62	110	4.46	0.68
Ability to use Internet effectively	0	1	13	63	115	4.52	0.65
Ability to create and publish multimedia	8	20	62	51	51	3.61	1.11
Ability to use the online learning management system chosen by the institution and compare it with other systems	3	13	48	65	64	3.90	0.99
Ability to provide support for students who are having technical problems	5	22	71	49	45	3.56	1.05
Ability to follow developments in online teaching technologies and adopt new technologies into the courses	4	22	58	64	43	3.63	1.02
Ability to express ideas, thoughts, and feelings in written form	0	1	16	58	116	4.51	0.67
Ability to organize messages concisely and clearly	0	1	16	67	108	4.47	0.67
Ability to use nonverbal communication elements (such as emoticons) effectively	15	23	59	47	46	3.45	1.20

Ability to motivate and encourage students to complete planned activities	1	5	27	94	65	4.13	0.79
Ability to leave enough time for instructional activities	5	14	57	64	48	3.72	1.01
Ability to complete planned activities in allocated time	2	8	39	76	64	4.02	0.90
Ability to manage time effectively	1	5	26	69	84	4.24	0.83
Ability to design and implement online learning activities that promote collaboration among students	3	30	57	55	41	3.54	1.06
Ability to create an online learning environment that promotes social interactions among students	4	26	70	49	38	3.49	1.03
Ability to see differences and similarities between online teaching and face-to-face teaching	0	6	39	69	71	4.11	0.85
Ability to decide whether or not online teaching is appropriate	1	7	33	71	73	4.12	0.87
Ability to design interesting and appealing online learning activities (instructional games, puzzles, questions) that facilitate achievement of the instructional goals and support active participation of students	9	21	56	60	38	3.53	1.09
Ability to prepare instructional materials that are easy to read and comprehend	2	3	29	70	80	4.21	0.85

Ability to provide enough feedback when and where needed	0	3	29	72	82	4.25	0.78
Ability to create a democratic environment in which student are able to communicate with each other unreservedly about the course content and feel no discrimination	0	10	47	63	65	3.99	0.91
Ability to present the appropriate online teaching role in encountered situations	0	5	40	75	64	4.08	0.82
Ability to analyze students' needs and characteristics, and take them into consideration when designing instructional activities	1	10	44	76	54	3.93	0.89
Ability to direct students in the use of different resources (online or other)	0	4	37	82	62	4.09	0.79
Ability to keep up with new learning and teaching theories, approaches, and models	0	14	59	53	59	3.85	0.96
Ability to develop and administer appropriate online assessment tools and strategies	0	13	48	62	61	3.93	0.94
Ability to cope with problem students without losing them	0	8	61	65	51	3.86	0.87
Ability to intervene in the discussions among students at the right time with appropriate approaches	0	8	54	68	53	3.91	0.87
Ability to select appropriate instructional activities to the available online technologies	0	10	42	83	49	3.93	0.84

Ability to act like an expert during online instruction	2	10	41	67	67	4.00	0.95
Ability to reach and follow up-to-date resources in the course content area	0	4	47	74	62	4.04	0.82
Ability to work collaboratively with the other experts in the course content area	3	15	57	68	44	3.72	0.97

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A9

Full-Time Faculty and Adjunct Faculty's Needed Skills for Online Teaching and Course Development - Importance to Online Instruction

	Full-Time Faculty		Adjunct Faculty			
	M	SD	M	SD	t-test	*p***
Ability to use computers effectively	4.69	0.49	4.70	0.53	0.15	0.88
Ability to use Internet effectively	4.68	0.50	4.74	0.48	0.72	0.47
Ability to create and publish multimedia	3.96	0.85	4.11	0.90	1.06	0.29
Ability to use the online learning management system chosen by the institution and compare it with other systems	4.23	0.92	4.42	0.78	1.36	0.18
Ability to provide support for students who are having technical problems	4.08	0.98	4.23	0.91	1.00	0.32
Ability to follow developments in online teaching technologies and adopt new technologies into the courses	4.20	0.82	4.37	0.794	1.30	0.19
Ability to express ideas, thoughts, and feelings in written form	4.54	0.64	4.67	0.58	1.28	0.20
Ability to organize messages concisely and clearly	4.54	0.62	4.71	0.56	1.96	0.05
Ability to use nonverbal communication elements (such as emoticons) effectively	3.15	1.16	3.18	1.20	0.14	0.89
Ability to motivate and encourage students to complete planned activities	4.34	0.68	4.52	0.79	1.56	0.12
Ability to leave enough time for instructional activities	4.51	0.73	4.51	0.69	0.02	0.99
Ability to complete planned activities in allocated time	4.57	0.72	4.58	0.60	0.09	0.93

Ability to manage time effectively	4.62	0.64	4.73	0.49	1.34	0.18
Ability to design and implement online learning activities that promote collaboration among students	4.09	0.86	4.24	0.82	1.11	0.27
Ability to create an online learning environment that promotes social interactions among students	4.01	0.88	4.20	0.87	1.38	0.17
Ability to see differences and similarities between online teaching and face-to-face teaching	4.36	0.70	4.42	0.76	0.47	0.64
Ability to decide whether or not online teaching is appropriate	4.39	0.77	4.26	0.99	0.96	0.34
Ability to design interesting and appealing online learning activities (instructional games, puzzles, questions) that facilitate achievement of the instructional goals and support active participation of students	4.20	0.80	4.24	0.92	0.28	0.78
Ability to prepare instructional materials that are easy to read and comprehend	4.58	0.60	4.65	6.19	0.66	0.51
Ability to provide enough feedback when and where needed	4.6	0.58	4.72	0.56	1.38	0.17
Ability to create a democratic environment in which student are able to communicate with each other unreservedly about the course content and feel no discrimination	4.23	0.85	4.33	0.90	0.68	0.50
Ability to present the appropriate online teaching role in encountered situations	4.31	0.70	4.50	0.75	1.65	0.10

Ability to analyze students' needs and characteristics, and take them into consideration when designing instructional activities	4.23	0.77	4.45	0.79	1.81	0.07
Ability to direct students in the use of different resources (online or other)	4.36	0.71	4.53	0.77	1.44	0.15
Ability to keep up with new learning and teaching theories, approaches, and models	4.26	0.80	4.40	0.78	1.12	0.26
Ability to develop and administer appropriate online assessment tools and strategies	4.43	0.65	4.60	0.68	1.57	0.12
Ability to cope with problem students without losing them	4.28	0.74	4.46	0.79	1.51	0.13
Ability to intervene in the discussions among students at the right time with appropriate approaches	4.21	0.85	4.49	0.69	2.20	0.03
Ability to select appropriate instructional activities to the available online technologies	4.39	0.62	4.51	0.69	1.16	0.25
Ability to act like an expert during online instruction	4.16	0.84	4.32	0.81	1.21	0.23
Ability to reach and follow up-to-date resources in the course content area	4.37	0.67	4.46	0.71	0.90	0.37
Ability to work collaboratively with the other experts in the course content area	4.03	0.84	4.36	0.84	2.45	0.02

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A10

Full-Time Faculty and Adjunct Faculty's Needed Skills for Online Teaching and Course Development – Self-Assessment

	Full-Time Faculty		Adjunct Faculty			
	M	SD	M	SD	t-test	*p***
Ability to use computers effectively	4.51	0.66	4.35	0.73	1.49	0.14
Ability to use Internet effectively	4.57	0.63	4.4	0.68	1.65	0.10
Ability to create and publish multimedia	3.59	1.15	3.65	1.15	0.30	0.76
Ability to use the online learning management system chosen by the institution and compare it with other systems	3.94	0.97	3.81	1.07	0.76	0.45
Ability to provide support for students who are having technical problems	3.55	1.07	3.57	1.02	0.14	0.89
Ability to follow developments in online teaching technologies and adopt new technologies into the courses	3.62	1.04	3.65	0.97	0.17	0.87
Ability to express ideas, thoughts, and feelings in written form	4.52	0.64	4.5	0.75	0.17	0.87
Ability to organize messages concisely and clearly	4.44	0.66	4.54	0.69	0.88	0.38
Ability to use nonverbal communication elements (such as emoticons) effectively	3.47	1.19	3.42	1.26	0.27	0.79
Ability to motivate and encourage students to complete planned activities	4.08	0.78	4.26	0.78	1.43	0.16
Ability to leave enough time for instructional activities	3.64	1.07	3.93	0.84	1.93	0.06

Ability to complete planned activities in allocated time	3.99	0.90	4.07	0.91	0.56	0.58
Ability to manage time effectively	4.18	0.85	4.40	0.79	1.59	0.11
Ability to design and implement online learning activities that promote collaboration among students	3.44	1.07	3.81	0.97	2.15	0.03
Ability to create an online learning environment that promotes social interactions among students	3.39	1.03	3.75	1.01	2.18	0.03
Ability to see differences and similarities between online teaching and face-to-face teaching	4.03	0.86	4.31	0.79	2.06	0.04
Ability to decide whether or not online teaching is appropriate	4.06	0.89	4.29	0.83	1.60	0.11
Ability to design interesting and appealing online learning activities (instructional games, puzzles, questions) that facilitate achievement of the instructional goals and support active participation of students	3.46	1.06	3.71	1.15	1.38	0.17
Ability to prepare instructional materials that are easy to read and comprehend	4.19	0.87	4.27	0.78	0.62	0.54
Ability to provide enough feedback when and where needed	4.16	0.80	4.48	0.67	2.54	0.01
Ability to create a democratic environment in which student are able to communicate with each other unreservedly about the course content and feel no discrimination	3.95	0.92	4.08	0.88	0.82	0.41
Ability to present the appropriate online teaching role in encountered situations	4.02	0.83	4.21	0.78	1.41	0.16

Ability to analyze students' needs and characteristics, and take them into consideration when designing instructional activities	3.84	0.93	4.15	7.51	2.16	0.03
Ability to direct students in the use of different resources (online or other)	4.05	0.79	4.19	0.77	1.09	0.28
Ability to keep up with new learning and teaching theories, approaches, and models	3.80	0.98	3.96	0.91	1.00	0.32
Ability to develop and administer appropriate online assessment tools and strategies	3.86	0.96	4.10	0.86	1.52	0.13
Ability to cope with problem students without losing them	3.79	0.91	4.04	0.77	1.89	0.06
Ability to intervene in the discussions among students at the right time with appropriate approaches	3.84	0.89	4.08	0.80	1.67	0.10
Ability to select appropriate instructional activities to the available online technologies	3.88	0.88	4.06	0.73	1.29	0.20
Ability to act like an expert during online instruction	3.95	0.95	4.13	0.92	1.20	0.23
Ability to reach and follow up-to-date resources in the course content area	3.98	0.82	4.19	0.81	1.60	0.11
Ability to work collaboratively with the other experts in the course content area	3.69	0.90	3.81	1.13	0.80	0.43

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A11

Comparison between Full-Time and Adjunct Faculty's Needed Skills for Professional Development in an Online Teaching and Course Development Using paired samples t-test - Comparing Importance to Online Instruction to Self-Assessment

	Importance to Online Instruction		Self-Assessment			
	M	SD	M	SD	t-test	*p***
Ability to use computers effectively	4.72	0.47	4.47	0.68	5.02	0.001
Ability to use Internet effectively	4.71	0.48	4.53	0.64	3.80	0.001
Ability to create and publish multimedia	4.02	0.85	3.60	1.11	5.09	0.001
Ability to use the online learning management system chosen by the institution and compare it with other systems	4.29	0.89	3.93	0.98	4.79	0.001
Ability to provide support for students who are having technical problems	4.12	0.97	3.55	1.05	6.87	0.001
Ability to follow developments in online teaching technologies and adopt new technologies into the courses	4.27	0.81	3.63	1.02	8.45	0.001
Ability to express ideas, thoughts, and feelings in written form	4.58	0.62	4.52	0.67	1.35	0.001
Ability to organize messages concisely and clearly	4.59	0.60	4.50	0.65	1.98	0.001
Ability to use nonverbal communication elements (such as emoticons) effectively	3.13	1.18	3.45	1.21	4.34	0.001
Ability to motivate and encourage students to complete planned activities	4.39	0.72	4.14	0.79	5.02	0.001
Ability to leave enough time for instructional activities	4.54	0.68	3.76	0.98	9.89	0.003
Ability to complete planned activities in allocated time	4.61	0.63	4.06	0.87	9.22	0.001
Ability to manage time effectively	4.68	0.57	4.25	0.83	7.49	0.001

Ability to design and implement online learning activities that promote collaboration among students	4.14	0.84	3.55	1.05	7.50	0.001
Ability to create an online learning environment that promotes social interactions among students	4.08	0.88	3.50	1.02	7.69	0.001
Ability to see differences and similarities between online teaching and face-to-face teaching	4.39	0.71	4.12	0.84	4.80	0.001
Ability to decide whether or not online teaching is appropriate	4.37	0.84	4.15	0.85	3.33	0.001
Ability to design interesting and appealing online learning activities (instructional games, puzzles, questions) that facilitate achievement of the instructional goals and support active participation of students	4.23	0.81	3.53	1.09	9.07	0.001
Ability to prepare instructional materials that are easy to read and comprehend	4.62	0.59	4.22	0.85	6.33	0.001
Ability to provide enough feedback when and where needed	4.65	0.55	4.27	0.77	6.93	0.001
Ability to create a democratic environment in which student are able to communicate with each other unreservedly about the course content and feel no discrimination	4.27	0.86	3.99	0.91	4.70	0.001
Ability to present the appropriate online teaching role in encountered situations	4.37	0.72	4.09	0.81	4.93	0.001
Ability to analyze students' needs and characteristics, and take them into consideration when designing instructional activities	4.30	0.78	3.93	0.89	5.81	0.001
Ability to direct students in the use of different resources (online or other)	4.42	0.71	4.10	0.77	6.01	0.001

Ability to keep up with new learning and teaching theories, approaches, and models	4.33	0.77	3.86	0.95	6.51	0.001
Ability to develop and administer appropriate online assessment tools and strategies	4.49	0.65	3.94	0.93	8.02	0.001
Ability to cope with problem students without losing them	4.33	0.76	3.87	0.88	7.55	0.001
Ability to intervene in the discussions among students at the right time with appropriate approaches	4.31	0.80	3.90	0.87	6.84	0.001
Ability to select appropriate instructional activities to the available online technologies	4.44	0.63	3.94	0.84	8.24	0.001
Ability to act like an expert during online instruction	4.21	0.81	4.01	0.94	2.90	0.001
Ability to reach and follow up-to-date resources in the course content area	4.42	0.66	4.03	0.82	6.60	0.001
Ability to work collaboratively with the other experts in the course content area	4.13	0.86	3.71	0.97	6.14	0.001

$^{**}p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A12

Full-Time Faculty and Adjunct Faculty's Resources towards Professional Development in an Online Teaching and Course Development – Importance to Online Instruction

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Means	*S.D.*
Have access to manuals concerning the implementation of online courses	2	23	40	68	68	3.88	1.04
Access to Internet connectivity and a computer that has enough capacity to be able to implement online teaching at work	0	1	2	32	166	4.81	0.46
Have access to synchronous online communication technologies (chat, video conference)	0	16	65	65	53	3.78	0.93
Have access to asynchronous online communication technologies (email, listserv)	1	1	8	57	132	4.60	0.64
Have enough time to design and develop instructional materials for online courses	1	5	17	41	134	4.53	0.80
Have enough time to implement online courses	0	2	13	45	136	4.61	0.66
Have material support (financial and technological) from the college in order to be able to design, develop and implement online education	0	5	9	51	130	4.57	0.70

Moral support (encouragement or motivation) from the college in order to be able to design, develop and implement online education	2	4	15	60	115	4.44	0.80
Have enough support from other content experts	0	6	31	81	75	4.17	0.81
Have easy access to resources related to content area	1	2	18	72	100	4.39	0.74
Full-Time Faculty and Adjunct Faculty's Resources towards Professional Development in an Online Teaching and Course Development – Self-Assessment							
Have access to manuals concerning the implementation of online courses	16	46	65	48	17	3.02	1.09
Access to Internet connectivity and a computer that has enough capacity to be able to implement online teaching at work	2	4	16	64	107	4.40	0.81
Have access to synchronous online communication technologies (chat, video conference)	8	27	60	51	43	3.50	1.12
Have access to asynchronous online communication technologies (email, listserv)	0	2	18	61	111	4.46	0.71
Have enough time to design and develop instructional materials for online courses	11	26	77	33	42	3.37	1.14
Have enough time to implement online courses	9	25	68	41	46	3.48	1.14

Have material support (financial and technological) from the college in order to be able to design, develop and implement online education	8	24	65	50	40	3.48	1.09
Moral support (encouragement or motivation) from the college in order to be able to design, develop and implement online education	11	27	72	36	41	3.37	1.15
Have enough support from other content experts	5	23	67	60	31	3.48	1.00
Have easy access to resources related to content area	3	12	49	78	44	3.80	0.93

$^{**}p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A13

Full-Time Faculty and Adjunct Faculty's Perceptions of Needed Institutional Resources for Professional Development for Online Teaching and Course Development - Importance to Online Instruction

	Full-Time Faculty		Adjunct Faculty			
	M	SD	M	SD	t-test	*p***
Have access to manuals concerning the implementation of online courses	3.75	1.05	4.21	0.92	2.89	0.00
Access to Internet connectivity and a computer that has enough capacity to be able to implement online teaching at work	4.84	0.39	4.72	0.59	1.43	0.16
Have access to synchronous online communication technologies (chat, video conference)	3.73	0.95	3.89	0.88	1.11	0.27
Have access to asynchronous online communication technologies (email, listserv)	4.59	0.67	4.61	0.59	0.22	0.82
Have enough time to design and develop instructional materials for online courses	4.54	0.81	4.49	0.78	0.38	0.70
Have enough time to implement online courses	4.62	0.66	4.58	0.65	0.38	0.70
Have material support (financial and technological) from the college in order to be able to design, develop and implement online education	4.54	0.73	4.65	0.64	1.02	0.31
Moral support (encouragement or motivation) from the college in order to be able to design, develop and implement online education	4.45	0.73	4.42	0.96	0.20	0.84

Have enough support from other content experts	4.10	0.80	4.32	0.81	1.72	0.09
Have easy access to resources related to content area	4.38	0.70	4.41	0.85	0.26	0.79

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A14

Full-Time Faculty and Adjunct Faculty's Perceptions of Needed Institutional Resources for Professional Development for Online Teaching and Course Development – Self-Assessment

	Full-Time Faculty		Adjunct Faculty			
	M	SD	M	SD	t-test	*p***
Have access to manuals concerning the implementation of online courses	2.94	1.07	3.22	1.11	1.61	0.11
Access to Internet connectivity and a computer that has enough capacity to be able to implement online teaching at work	4.41	0.83	4.37	0.76	0.31	0.76
Have access to synchronous online communication technologies (chat, video conference)	3.49	1.10	3.51	1.17	0.09	0.93
Have access to asynchronous online communication technologies (email, listserv)	4.47	0.68	4.44	0.79	0.23	0.82
Have enough time to design and develop instructional materials for online courses	3.31	1.22	3.50	0.93	1.15	0.25
Have enough time to implement online courses	3.41	1.17	3.63	1.05	1.17	0.24
Have material support (financial and technological) from the college in order to be able to design, develop and implement online education	3.53	1.08	3.35	1.12	1.03	0.30
Moral support (encouragement or motivation) from the college in order to be able to design, develop and implement online education	3.31	1.13	3.53	1.19	1.19	0.23

Have enough support from other content experts	3.42	0.93	3.62	1.15	1.14	0.26
Have easy access to resources related to content area	3.83	0.88	3.72	1.05	0.73	0.47

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.

Table A15

Comparison between Full-Time and Adjunct Faculty's Perceptions of Needed Institutional Resources for Professional Development for Online Teaching and Course Development Using paired samples t-test - Comparing Importance to Online Instruction to Self-Assessment

	Importance to Online Instruction		Self-Assessment			
	M	SD	M	SD	t-test	*p***
Have access to manuals concerning the implementation of online courses	3.89	1.02	3.02	1.09	10.69	0.001
Access to Internet connectivity and a computer that has enough capacity to be able to implement online teaching at work	4.81	0.46	4.40	0.81	6.80	0.001
Have access to synchronous online communication technologies (chat, video conference)	3.77	0.92	3.49	1.13	3.34	0.001
Have access to asynchronous online communication technologies (email, listserv)	4.63	0.56	4.47	0.70	3.87	0.001
Have enough time to design and develop instructional materials for online courses	4.58	0.70	3.37	1.14	13.33	0.001
Have enough time to implement online courses	4.65	0.61	3.51	1.12	13.25	0.001
Have material support (financial and technological) from the college in order to be able to design, develop and implement online education	4.62	0.63	3.48	1.10	13.03	0.001

Moral support (encouragement or motivation) from the college in order to be able to design, develop and implement online education	4.45	0.77	3.37	1.15	11.78	0.001
Have enough support from other content experts	4.19	0.79	3.48	1.00	9.12	0.001
Have easy access to resources related to content area	4.41	0.70	3.79	0.93	8.55	0.001

**$p < .05$

Note. M=Mean. SD=Standard Deviation. A 5-point Likert scale ranging from very low (1) to moderate (3) to very high (5) was used to measure participants perceptions and beliefs.